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The Teaching of
Hygiene
and
Safety

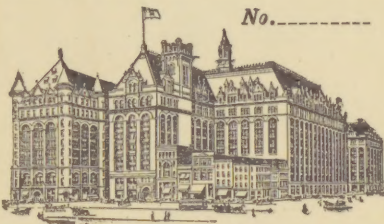
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FOREWORD

Perhaps no movement in education, except in the case of industrial training, has of late received so much attention as hygiene, or the preservation and improvement of health. While it is obvious that the public schools can undertake to offer only a limited program of health instruction, yet the contribution may be large. Popular interest in health is capital which may be drawn upon in efforts to conserve the health of pupils.

The schools cannot ignore, indeed they do not ignore, the new spirit concerning health and sanitation. This spirit is reflected in so many ways that to enumerate them here is impossible. The improvement of housing conditions, the abolition of the common drinking cup, the transfer of the emphasis from the cure of disease to its prevention, summer playgrounds, the teaching of swimming, open air schools—are half a dozen of a score of such movements little known to the fathers and mothers of today when they themselves were in school. It has been a hygienic revolution, the proportions of which are in a degree reflected in the size of this pamphlet.

The purpose of this monograph is to point out how much of all this it is possible, or desirable, to use in the public education of youth from five to eighteen years of age. What to attempt in this great field, and how to get it done, are questions which in some degree this pamphlet tries to answer. Here, as elsewhere, the teacher, upon whom we must all depend, is the factor of greatest importance. While it may not require a new type of teacher to teach hygiene in the sense in which it is defined in this pamphlet, yet a new attitude toward teaching the subject is necessary, particularly on the part of those teachers who have been satisfied with the assignment and hearing of textbook lessons in what someone has called “mummified physiology.”

The monograph lays stress not so much upon information as upon conduct. That children should have a certain amount of knowledge about health conditions is important, but that they

should have good health habits is of greater import. In this field practice is more important than theory. In accordance with this belief, the imparting of mere physiological facts as an aim is minimized, and training in right habits of conduct is constantly urged. This kind of training is difficult, it is true, but it should be attempted nevertheless.

The legislature of 1913 enacted a statute making obligatory the teaching of safety in the public schools. This was probably done in accordance with the belief that the increasing public interest in "safety first" should find expression in the instruction and training of the schools; an example of new demands being made upon the schools—not by superintendents, it is to be noted, but by outside opinion. No appropriation was made, however, to prepare and print the handbook which was mentioned in the statute. In order to fulfil at least the spirit of the statute this monograph contains material which may be used as a guide in the teaching of safety. Perhaps all that the schools can do here is to give information and warning. How far this may affect the conduct of the pupils cannot be determined, but if both information and admonition are given with confidence and persistence, fewer casualties among children, and subsequently among adults, should be the result.

The monograph does not ignore the fact that the physical conditions under which children and teachers do their work affect the health of children.

It is constructive in directing attention to plays and games and other recreations that will build up health, for the school should not merely *maintain* the health of children; it should *improve* their health.

A course of study is presented. It is not, however, a detailed course of study. Teachers and superintendents should choose from it that which they believe will be of most value to their own schools and pupils. This freedom of choice must not, however, be interpreted as license not to teach, or not to teach definitely and with purpose, the subject material presented. A definite time each week should be set apart for the work. Suggestions concerning the selection of this period are given in the monograph prepared by this Department entitled *The Making of School Programs*.

So many persons have generously aided in the preparation of

the monograph that it would be difficult to name all those to whom acknowledgment is due. Following are some of those of whose assistance it is pleasant to record our appreciation.

Dr. William G. Schauffler, Lakewood, President State Board of Education

Dr. Elias J. Marsh, Paterson, Chairman Committee of State Sanitary Association

Mrs. Alexander Marcy Jr., Riverton, Chairman Committee from Congress of Mothers' Clubs

Mrs. John V. Cowling, Millville, Chairman Committee from Federation of Women's Clubs

Gen. Lewis T. Bryant, Commissioner of Labor, State of New Jersey, Department of Labor

William E. Stubbs, Employers' Liability Clerk, State of New Jersey, Department of Labor

Randall D. Warden, Newark, Chairman Committee of Physical Training Directors

Dr. Joseph E. Raycroft, Head of Physical Training Department, Princeton University

Dr. William H. Burnham, Professor of Pedagogy and School Hygiene, Clark University, Worcester

Keene Fitzpatrick, Coach Princeton University Track Association

E. E. Rhodes, Vice-president Mutual Benefit Life Insurance Company, Newark

Forrest F. Dryden, President Prudential Insurance Company, Newark

E. M. Rine, General Superintendent Delaware, Lackawanna and Western Railroad Company

W. C. Hope, General Passenger Agent Central Railroad Company of New Jersey

R. H. Newbern, Superintendent Pennsylvania Railroad Company

A. J. Van Brunt, Public Service Corporation, Newark

Dr. A. C. Hunt, Chief of Division of Medical and Sanitary Inspection, State of New Jersey, Department of Health

Thomas J. Headlee, Executive Officer in Charge of Mosquito Work, New Jersey Agricultural Experiment Station

C. Albert Gasser, Inspector Bureau of Combustibles and Fire Risks, Newark

Dr. William H. Tolman, Director American Museum of Safety,
New York City

E. B. DeGroot, General Director Field Houses and Play-
grounds, Chicago South Park Commission

Raymond Adair Albray, Editor New Jersey Dental Journal,
Newark

Mrs. Edwin C. Grice, Vice-president Home and School League,
Philadelphia

Chiefs of Fire Departments of Trenton, Jersey City, Newark,
Camden, Atlantic City

Dr. H. M. Corwin, Medical Inspector, Bayonne

A Committee of County Superintendents of Schools, of which
B. C. Wooster was Chairman

Clinton S. Marsh, Superintendent of Schools, Summit

Zenos E. Scott, Superintendent of Schools, Asbury Park

John R. Wilson, Superintendent of Schools, Paterson

A. J. Demarest, Superintendent of Schools, Hoboken

Dr. Henry Snyder, Superintendent of Schools, Jersey City

Ebenezer Mackey, Superintendent of Schools, Trenton

U. G. Wheeler, formerly Superintendent of Schools, Passaic

Charles B. Boyer, Superintendent of Schools, Atlantic City

David B. Corson, Assistant City Superintendent, Newark

E. K. Sexton, Secretary Board of Examiners, Newark

Martin L. Cox, Principal Thirteenth Avenue School, Newark

Miss Mabel Newton Betticher, Cleveland Street School,
Orange

Miss Jessie H. Bancroft, Brooklyn

This list shows that the Department has endeavored to secure the cooperation of some of those individuals and organizations in the State that are most vitally interested. It also reveals the fact that an attempt has been made to get a consensus of opinion as to the teaching of the subject from among those individuals and organizations in the State that appear to be best qualified to judge.

The whole has been an undertaking which has consumed a large amount of time and thought. For this, credit is due to Mr. George A. Mirick, formerly Assistant Commissioner of Education in charge of Elementary Education.

C. N. KENDALL

Commissioner of Education

The Teaching of Hygiene and Safety

IMPORTANCE OF EDUCATION IN HYGIENE

In view of the fact that New Jersey compels all children, rich and poor, of all degrees of intelligence, to attend school, and by its Constitution guarantees them an adequate education, suitable to their capacities and needs, there is a peculiar obligation resting upon communities and all school authorities, to provide wholesome conditions for the school life of the young people. An equally imperative obligation rests upon each teacher in the State so to prepare herself by proper study and training that she may give increasingly efficient training and instruction to the children under her charge, to the end that, through the school, they may become stronger in body and mind, they may daily be acquiring better habits of living and thinking, they may be growing in their understanding of what constitutes wholesome living for themselves and for the community in which they live, and, finally, that they may develop a sense of personal responsibility in these matters. This training will be revealed in a growing interest and activity in those things that pertain to their own health, to the health of their schoolmates, and to the health of members of their families.

Dr. William H. Burnham, Professor of Pedagogy and School Hygiene, Clark University, thus enumerates the present day "fundamental" problems in health education:

1. How to protect infancy so that we may save the lives of the healthy children that are born, and how to protect them from contagious diseases, rickets, and the like, so that when they come to the period of school life they may not be inevitable candidates for the so-called school diseases.
2. How in the early years of school life so to place the emphasis upon

hygiene that, by cooperation with the home, normal development may be ensured, the foundation laid for future health, and the children saved from the usual school defects, defective sense organs, decaying teeth, deformed jaws, defective speech organs, adenoids, and the rest.

3. How at the period of adolescence to develop such healthful interests and such habits of healthful activity that the youth may be saved from emotional neuroses, social evils, and the like, and both morals and health be ensured.

4. How in all grades to adapt education to the physiological and psychological age and to develop such habits of work and rest, of attention and orderly association, and such normal habits and interests in general, that the graduates of the school may no longer become candidates for the hospital but develop into normal, healthy workers.

5. How to provide for all a sanitary schoolhouse and an ample playground.

6. Finally, how to bridge the gap between knowing and doing, so that our hygienic knowledge may be utilized everywhere and every school graduate become a teacher and soldier in the army of health.

Such are the great problems with which we have to deal. They are fundamental to education. We talk of education for citizenship, education for life, education for efficiency and for character, but if we ignore the laws of biology and of social hygiene, if we penalize the parentage of the fit, with the best possible education the race will degenerate. If we disregard the hygiene of infancy, an enormous percentage of the best children born will die, and a large percentage will survive as candidates for scoliosis, tuberculosis, and imbecility. If hygiene be not emphasized in the early years of the kindergarten and primary grades, then the long list of physical defects, adenoids, decayed teeth, deformed jaws, and the like, will continue. If our youth at adolescence are not morally and hygienically trained, social vice will remain with us. If the conditions of efficient brain activity and the principles of mental hygiene are not regarded throughout the whole system of education, and if positive habits of healthful activity are not formed, public education will remain unsatisfactory, and the product be inefficient, unreliable, and continue to furnish candidates for the sanitarium and hospital for the insane; and, finally, unless we can devise methods of *transforming our hygienic knowledge into hygienic doing our service will remain futile.*

At the meeting of the National Education Association held in July, 1913, a series of "Declarations" of principles was set forth. The following relate to school hygiene, its scope and agencies.

1. We therefore indorse all agencies which extended and varied experience has shown to better the health of school children, safeguard them from disease, render them healthier, happier and more vigorous, and to insure for them such physical and mental vitality as will best enable them to take full advantage of the free education offered by the State. Among such agencies, the following are of special importance:

2. Medical inspection for preventing the spread of contagious disease; and for the discovery and cure of remediable physical defects;

3. Dental inspection for the purpose of securing sound teeth among school children;

4. School nurses, who work with doctors, teachers, and parents to improve the health of the children;

5. Open-air schools, for giving to the physically weak such advantages of pure air, good food, and warm sunshine as may enable them to pursue their studies while regaining their physical vigor;

6. Special classes for the physically handicapped and mentally exceptional in which children may receive the care and instruction fitted to their needs;

7. School gardens, which serve as nature-study laboratories, where education and recreation go hand in hand and increased knowledge is accompanied by increased bodily efficiency;

8. School playgrounds, which afford space, facilities, opportunity, and incentive for the expression of play instincts and impulses;

9. Organized athletics, which aid in physical development and afford training in alertness, intense application, vigorous exertion, loyalty, obedience to law and order, self-control, self-sacrifice, and respect for the rights of others;

10. All adjuncts of better sanitation in schoolhouses, such as sanitary drinking cups and fountains, systems of vacuum cleaning, improved systems of lighting, heating and ventilation;

11. The health movement in our public schools has been transformed during the past decade from a purely negative movement, having as an object the avoidance of disease, to a splendidly positive movement, having as its aim the development of vitality. We desire for the youth of the future, schools in which health instead of disease will be contagious, in which the playground will be as important as the book, and where pure water, pure air, and abundant sunshine will be rights and not privileges. In these schools the physical, the mental, and the moral will be developed together and not separately; the child will live not only in healthy surroundings, but in surroundings where he will acquire habits of health which will be life-long.

PURPOSE AND METHOD OF INSTRUCTION IN HYGIENE

The following questions present themselves to the mind of the teacher about to undertake the work of teaching hygiene:

1. What should be the specific purpose of this education?

2. What methods should be employed?

3. What test should be applied to determine the profit that the pupils have received from the teacher's efforts?

PURPOSE

Miss Mary Reesor, instructor in the Department of Physical Education, Teachers College, Columbia University, in the preface to the course of study in Hygiene for the Speyer School, published in the Teachers College Record, May, 1912, expresses the purpose as it is now universally recognized, as follows:

It is evident that the work in hygiene should deal more with the creation of habits than with the giving of information: that it should have more to do with practical facts relating to food, fresh air, bathing, self-control, work and play, than with the mechanism of respiration, or with the histology of bone or muscle. It should deal more directly with the environment than with the individual; more with the present than with the future; more with the good effects of hygienic habits than with the ill effects of unhygienic ones. Instruction in hygiene is a failure if its influence does not extend beyond the school building and grounds into life itself; if the formation of hygienic habits does not carry over from the school room into the happenings of ordinary home and street life.

Briefly, the main purpose that the teacher should hold in mind, in this field of instruction, is the bettering of the conduct of her pupils in their various activities, rather than the giving to them of a large amount of information. The study of physiology and anatomy should be limited to that amount which is needed in each grade to make the children intelligent in applying the hygiene instruction which they receive. This amount of information, however, will again be limited by their ability to understand and by their interest.

NOTE. Further suggestions will be made on this point under "Assignment of Work by Grades."

METHOD

Interest of children Miss Reesor, in her introduction to the course of study referred to previously, makes the following statements regarding the interest of children, or rather their lack of interest in matters pertaining to hygiene:

- a. The child has no interest in health as an end in itself.
- b. His interest is not in when, how, where, and why he should exercise. Given the natural opportunity, the activity comes. It needs direction rather than stimulation.
- c. Posture as an isolated thing holds no interest for the child. It makes its appeal only when correct carriage and posture help him to do what he wishes to do.



Open Air Class Building at Broadway School, Hackensack



Open Air Class in Session, Broadway School, Hackensack

d. The structure of the body does not appeal to the child. He is not interested in how he is made, but in what he can do.

It is, of course, absolutely necessary to take these instinctive mental attitudes of children into account in formulating methods of instruction.

The difficulties of the problem enumerated above need not be causes for discouragement, but rather guides to the teacher, helping her to formulate her plans.

It is evident that education in hygiene has two phases:

**Two-fold
nature of
the method**

1. The process of training in right living;
2. The process of informing, so that the right living may be intelligent.

Properly to relate these, giving to each process its appropriate emphasis, and allowing each to have its place at the most effective time, will tax the judgment of the most discriminating teacher. It is not to be expected that a perfect adjustment will be made by anyone.

It is believed by some that hygiene should be taught incidentally. By this is not meant that the education should be haphazard, but rather that the teacher, having in mind the fundamental importance of the subject, should enforce the hygiene lesson at the time when conditions seem to call for it. In some schools this plan may work successfully, but it is believed that for practically all schools there needs to be a definite time set aside for well planned and definite instruction.

NOTE. More specific suggestions for methods will be found under the "Assignment of Work by Grades."

Textbooks

It is believed that little, if any, value would result from the use of a textbook by children during the first four years of school. By the fifth year pupils have gained some ability to study a book, and a simple, interesting, modern textbook in hygiene should be put into their hands. An advanced elementary book should be furnished seventh and eighth year pupils. Of course, this two book series may be furnished as a three or four book series, if that is preferred.

These books should treat the subject from the point of view of hygiene. They should deal with the common facts and affairs of life and stimulate to intelligent inquiry and practice. They should not be used as reading books merely. Besides giving information they should stimulate to discussion and to collateral reading and investigation. In the study of the book pupils should make much use of drawing—copying and drawing from memory the illustrations, both on the blackboard and on paper.

TEST OF A PUPIL'S PROFIT IN THE WORK

From what has been said before, it is evident that the best test of the profit that a pupil has received from his work in hygiene is not a set of questions whose answers reveal merely how much information is stored up in his mind, but again the real test is the life which he leads, whether or not he is applying daily, in his personal conduct, the better ideas of health which have been discussed in school, whether he is taking an intelligent interest in matters pertaining to health, and, lastly, whether he knows something of the reasons for the better practices.

If the instruction in hygiene is accomplishing its purpose, the pupils will increasingly be taking the initiative in bettering and caring for the school surroundings. They will be ambitious, with the teacher, to keep the schoolroom clean and to make it as attractive as it can be made under the conditions. They will be interested to plan, and to execute plans, for the proper care and use of the school grounds, and for keeping the outhouses, or toilet quarters, in sanitary and moral condition. There are many schools in this State where the teachers and pupils are accomplishing these things with very little aid from the community at large. It would appear that if this is true of some schools, it may be true of all.

Observation of the daily life of the pupil can alone reveal these facts. Are the children neat in their dress? Are they clean in person? Are the teeth clean? Is the hair combed? Do the pupils need less and less suggestion from the teacher about the care of the dressing-room and the good order of the desks, inside and out? Are they careful to avoid eye-strain by changing their seat when they cannot see the board or when the sun shines in their eyes or on their work? Do they adjust the window shades to regulate the light? Do they read the thermometer

correctly and keep the temperature record accurately? Are they able to regulate the heating and ventilating in the schoolroom?

This observation of the daily life and habits of the pupils may be supplemented by the less valuable test of a series of questions regarding their manner of life, and their knowledge of the proper conduct of life, which may very properly modify the rating given them in hygiene.

FIELD OF EDUCATION IN HYGIENE

All the various elements which relate to health—the physical, the mental and the social—have come to be included under the term “hygiene.” Roughly, these various elements may be classified as follows:

- I. Personal hygiene
 - a. Health of the body and bodily action
 - b. Health of the mind and mental action
 - c. Proper social relations and moral conduct
- II. Family hygiene
- III. School hygiene
- IV. Community hygiene
- V. State hygiene
- VI. National hygiene

In each of these fields three phases may be recognized:

- 1. Conservation or preservation of health
- 2. Improving health and health conditions
- 3. Eradicating disease, and removing disease-producing conditions.

As a supplement to education along the lines just enumerated, it has come to be realized that all people at the present time, but especially children, need to be made aware of the dangers to life and health, in their multiplied forms, so that they may be able to see these dangers, and with intelligence avoid them.

The school must concern itself with each of the factors in this broad field of hygiene.

A brief statement is here made regarding each one of these classes of facts, to make clear its scope, and incidentally to suggest the general method of treating it.

PERSONAL HYGIENE

Personal hygiene consists in keeping the body and the clothes clean; in caring for the sense organs (the ears, the eyes, and the nose); in providing the body with food, drink, and air, of proper quality and in proper quantity; in regulating the action of the vital organs to avoid strain or other injury; in regulating work, play, and rest; in controlling the natural appetites in *all matters*, so that the health may be established and preserved. In addition, the personal behavior (manners, honesty and truthfulness) has much to do with personal well-being.

With young children, direct, positive instruction, and interesting exercises in application, through informal dramatization, are likely to be most effective. With older pupils, more indirect methods are doubtless desirable.

In addition to the foregoing, with pupils of the upper elementary grades some simple questions of mental hygiene should be discussed.

FAMILY HYGIENE

Besides being an individual, every pupil is a social being, related to the family, to the school, to the community at large, to the State. Each of these social relations has an influence on the child. In the family he is not likely to be able to modify conditions of life, his relation there being one of obedience to parents. At the same time he may carry into the home the instruction that has been wisely given in the school, and by modifying his own personal habits, may indirectly influence the home for good. Intelligent people will welcome to the home the instruction of the school as it is brought by the child. No teacher should be discouraged if some objection or criticism is met with in the homes of the less fortunate, although she should always be governed in her instruction by a possible or an actual antagonistic attitude of the home.

In any case, the general problems relating to the hygiene of the home may properly be discussed with children. The general principles underlying the selection of food and its preparation, the time that should be devoted to sleep, the ventilation of sleeping rooms, should be given, but, above all, especially in the lower grades, emphasis should be placed upon the proper attitude and conduct of children in the home, in such matters as obedience,

honesty, truthfulness, kindness, etc. Lessons in these matters, discussed in school and approved by teacher and schoolmates, reinforce in the strongest way the precepts of parents.

SCHOOL HYGIENE

Pupils should early learn how to make themselves acceptable and worthy members of the school community. Through simple dramatizations, stories, and the study of pictures which involve these relations, they may become aware of the qualities that make them agreeable companions and learn how to adapt themselves to the social life of the school. Personal cleanliness, of course, is fundamental. They may, at the same time, learn to assume the natural obligations that rest upon individuals in any social organization. They should not be expected to do the work that properly belongs to the janitor. On the other hand, it is unfortunate that, in so many schools, the employment of the janitor seems in the minds of the pupils to relieve them of all responsibility as to the care of the school and its surroundings. Each one should be responsible for an orderly desk. Many teachers have found it of great help to the general discipline of the school to divide the class into committees which are given certain duties to perform in turn. The school life itself gives the very best opportunity for the application of the lessons that are taught. It is believed that when the proper attitude has been established every schoolhouse, and its surrounding grounds, will be clean, neat and attractive, because the teachers and children are unwilling that it should be otherwise and therefore put something of their own thought and effort into making it so.

The school program should be so constructed that the day's work may promote health and not produce debility. Frequent rest periods, "flushing" the schoolroom with out-of-door air two or three times a day in all weathers, and a ten or fifteen minute out-of-door recess will contribute to this end, and will return large dividends upon the time spent.

COMMUNITY, STATE AND NATIONAL HYGIENE

The study of the relation of the school children to these social groups should doubtless be left until the sixth, seventh, and eighth years. When this period is reached it will be found that these fields contain many questions in hygiene that will be interesting

and profitable for the pupils to discuss. Some of these questions are suggested in the "Assignment of Work by Grades."

It is strongly believed that at least one teacher should be on the school grounds during the school recess. In large schools there should be two teachers, one on the girls' side of the playground space and the other on the boys' side. This is done in many good school systems. Much objectionable language and other practices which should not prevail on school premises will be discouraged, or put an end to, if this precaution is taken.

BOOKS FOR SUPERVISORS AND TEACHERS

Terman, Lewis M.—The Teacher's Health

Houghton Mifflin Co., 60 cents

Very valuable for the teacher's personal use and for the information of the school authorities

Tolman, William H.—Hygiene for the Workers

American Book Co., 50 cents

A most practical and useful book for the information of actual and prospective workers and for employers

Russell Sage Foundation, Department of Child Hygiene
Publications

New York City, 5 cents each

Most important discussions by recognized authorities. See page 45

Health Education League.—Health-Education Series

8 Beacon St., Boston, Mass., 2 cents to 10 cents each.

Paper covered booklets prepared by competent writers and endorsed by leading physicians. See page 46.

Burrage & Bailey.—School Sanitation and Decoration

D. C. Heath & Co., \$1.50

A practical guide for the making of a sanitary and beautiful school environment

Bancroft, Jessie H.—Games for the Home, School, Playground and Gymnasium

Macmillan Co., \$1.50

Recommended by directors of physical training; very complete and fully illustrated

Bancroft, Jessie H.—Posture in School and Home

Macmillan Co., \$1.50

Recommended by directors of physical training

Stecher, William A.—Games and Dances

J. J. McVey, Philadelphia, \$1.25

Games, song-games, and dances for children, arranged by grades. Full directions given for playing the games. The author is the Director of Physical Education, Public Schools, Philadelphia

Johnson, George E.—Education by Plays and Games

Ginn & Co., 90 cents

The theory, history and place of play in education, with graded groups of games for use in and out of school

Johnson, George E.—What to do at Recess

Ginn & Co., 25 cents

The author of this and the preceding book is the Superintendent of Playgrounds, Pittsburg. Games for primary, intermediate, and grammar grades are fully and clearly described

Dressler, Fletcher B.—School Hygiene

Macmillan Co., \$1.25

Written by the Specialist in School Hygiene and School Sanitation, United States Bureau of Education. An authoritative discussion of the hygiene of school conditions

Hough & Sedgwick.—The Human Mechanism

Ginn & Co., \$1.25

An exceptionally valuable book for the teacher's use. "Its keynote is the right conduct of physical life." Written by scientists who are also successful teachers

Holmes, Arthur.—The Conservation of the Child

J. B. Lippincott Co., \$1.25

For supervisors and students of backward children. Discusses fully the diagnosis and treatment of abnormal children

Shaw, Edward R.—School Hygiene

Macmillan, \$1

Rapeer, Louis W.—School Health Administration

Teachers College, Columbia University, \$2.15

Medical Inspection Plan (separate), 50 cents

For medical inspectors. A scientific study of the administration of school health provisions

Cornell, Walter S.—Health and Medical Inspection of School Children

F. A. Davis Co., Philadelphia, \$3

The standard book on this subject published in the United States. 614 pages, 200 engravings, mostly original. For physicians, medical inspectors, principals and directors

The following books will be found particularly helpful for general readers and for use in women's and other organizations interested in schools.

Denison, Elsa.—Helping School Children
Harper, \$1.40

Suggestions for efficient cooperation with the public schools

Putnam, Helen C.—School Janitors, Mothers and Health
American Academy of Medicine Press, Easton, Pa.

Cloth, 200 pages, \$1 postpaid

5 to 9 copies to one address, 90 cents each

20 to 24 copies to one address, 80 cents each

25 or more copies to one address, 70 cents each

"It indicates with emphasis a special field in which benefits should come from the more active participation of women in public affairs."

Curtis, Henry S.—Play and Recreation for the Open Country
Ginn & Co., \$1.25

Contains many helpful suggestions for the organization of recreation in the rural home, in the rural school and in the rural community. Intended for parents, teachers and other students of rural life

Terman, Lewis M.—The Hygiene of the School Child
Houghton Mifflin Co., \$1.65

The author has summarized and interpreted the best and most valuable of the technical literature on school hygiene for parents and teachers.

Hoag and Terman.—Health Work in the Schools
Houghton Mifflin Co., \$1.60

ASSIGNMENT OF WORK BY GRADES

In preparing the following free use has been made of the plans that have been worked out elsewhere.

The work suggested for the kindergarten is that carried on in the Speyer School, New York City, as published in the Teachers College Record, May, 1912.

Many suggestions have been taken from Bulletin No. 47, 1913, United States Bureau of Education, entitled "Good Manners and Right Conduct for use in Primary Grades."

No teacher, whether she has one grade or eight grades, should attempt to do all that is here proposed. Each should be governed in her selections by her judgment of what she considers most fundamental, by the needs of her children, and by the possible prejudices of parents and the community. There is certainly sufficient variety of material so that every teacher in the State may do something each week that will appeal alike to pupils and parents, and will elevate the standards and practices of living and thinking.

In a pamphlet issued by this Department entitled *The Making of School Programs* will be found definite suggestions regarding the time to be given this subject and its place in the school program in different types of schools.

**Time and place
in program**

The following additional suggestions are made.

SCHOOLS OF ONE OR TWO PRIMARY GRADES

The practical phases or problems of hygiene as suggested in "Assignment of Work by Grades" should be the basis of discussion and instruction at least once a week, and oftener as occasion arises.

SCHOOLS OF ONE OR TWO GRAMMAR GRADES

At least thirty minutes per week.

SCHOOLS OF GRADES I-IV

Morning exercise discussions, or a special exercise Friday afternoons, or at times the subject of oral and written composition exercises. The whole school may be united for these exercises.

SCHOOLS OF GRADES V-VIII

At least one period a week, twenty to thirty minutes. Each grade should have the use of a book. The entire school may be taken together for the discussion of selected topics, the textbook being used largely for reference and silent study.

SCHOOLS OF GRADES I-VIII

One period each week, twenty to thirty minutes. The whole school may be united for this exercise.

OUTLINES AND NOTES

KINDERGARTEN

OUTLINE

I. The morning circle

1. The morning greeting; influence of the happy, attractively clean child. Songs and exercises involving showing of hands, clean clothing, neat shoes, etc. Emphasis upon the delight of being associated with happy, clean children rather than upon the disgust occasioned by the unclean children. The estimation of teacher and friends is often a strong incentive to right doing.
2. Home life: games involving imitation of processes in the home
 - a. How mother gets children ready for school
 - b. What a child does for himself
 - c. Getting breakfast; preparation and care of food suitable for breakfast
 - d. Lunch; suitable food, candy, fancy cakes, etc.
 - e. Airing beds and clothing; care of doll's beds
 - f. Sweeping, dusting
 - g. Sleeping; hours, ventilation of room, night clothing
 - h. Father's care
 - i. Mother's care

II. Lunch period

1. Clean hands
2. Use of napkins
3. Protection of milk and crackers
4. Table manners

III. Daily work

1. Care of others; responsibility of older for younger children
 - a. Placing of chairs
 - b. Giving out material
 - c. Putting on wraps
 - d. Keeping room clean
 - e. Care during fire drill
 - f. Care during play periods
2. Personal habits which affect others as well as the individual himself
 - a. Coughing; turning head, holding hand or handkerchief over mouth when coughing or sneezing
 - b. Colds; use of handkerchief
 - c. Personal cleanliness
 - d. Use of pencils
 - e. Individual drinking cups
3. Care of plants and materials
4. Games, songs, etc.
5. Pictures
6. Excursions
7. Daily and seasonal interests

NOTES

"Hygiene situations and material should never be forced. Where they are, they become artificial, affected, insincere and useless."

GRADES I-IV**OUTLINE****Health of Body****I. Cleanliness and tidiness**

1. Cleanliness and care of person
 - a. Hands
 - b. Face
 - c. Teeth, eyes, ears
 - d. Body, skin
 - e. Finger nails
 - f. Hair
2. Clean and neat clothes and surroundings

II. Self-control and prudence

1. Eating: quantity, quality, mastication
2. Drinking: purity of water, mode of drinking; avoid tea and coffee
3. Sleeping: proper amount
4. Breathing: breathe fresh, clean air through the nose (not through the mouth)

III. Exercise (The teacher will benefit pupils most by teaching them games and by encouraging and supervising play. Abstract discussion of "Exercise" is not useful for pupils of this age. See Appendix C)

IV. Physical courage (Encourage pupils to bear pain and praise them when they show this kind of endurance)

V. Posture (By much training and insistence, and by little talk, secure good posture as a *habit* in standing, sitting and walking. See Appendix C)

Health of Mind

I. Industry

II. Accuracy

III. Thoroughness

IV. Perseverance

1. In a hard task
2. In an unpleasant task

V. Patience

1. With slow progress
2. In hard work
3. In unpleasant work

VI. Self-reliance

VII. Love of truth; candor

Social Relations

I. Obedience

1. Punctuality; promptness
2. Orderliness in the home and school life and on the street

II. Courtesy

1. In bearing; cheerfulness
2. In greeting parents, older persons, teacher
3. In meeting an older person
4. In helping others
5. In passing in front of a person
6. In acknowledging a favor
7. In giving or receiving a gift
8. In sharing something with a friend
9. In the presence of strangers
10. At meals
11. At play; fairness, language

- III. Truthfulness (Teach by illustrations and in connection with occasions that may arise)
 - 1. At work
 - 2. At play
 - 3. In speech; frankness
 - 4. In action; openness
- IV. Honesty
 - 1. At work (Do not copy from others)
(Do not deny your faults)
 - 2. At play (Play fair)
 - 3. Do not take what is not yours
- V. Cooperation
 - 1. Helping at home
 - 2. Helping at school
- VI. Friendliness, loyalty, sympathy
- VII. Gratitude
- VIII. Patriotism

Preservation of Health—Safety

- I. Dangers in the home (see Appendix E)
- II. Dangers on the street (see Appendix E)
- III. Dangers of a general nature (see Appendix E)
- IV. Emergency treatment (see Appendix F)
- V. Alcohol, tobacco (see Appendix I)

NOTES

As has been previously noted, children in these grades are little interested in the laws of health in the abstract and they have not yet the understanding to grasp *the reasons* for the different lines of action that are discussed. They need positive and definite instruction given in such a way that they can *at once* put the instruction into practice. Almost all the lessons may be dramatized; that is to say, acted out in a variety of ways. Dialogues may be composed orally in the hygiene or composition time in the earlier grades and later they may be written. Children of these grades will delight to "play" these dialogues and dramatic games, and with little help from the teacher will plan them and carry them out. These games are exactly the sort they play by themselves when they "play house," "play dolls," "play store-keeping," etc. If the children do not do these things in school it is because the teacher in some way prevents it.

A few concrete illustrations are here given. They touch only

a few topics, but the teacher will be able to apply the method to the various topics she selects to teach, and she will be able to adapt them to the grade of pupils she may have.

Exercise on Eating

The teacher has had a simple talk on mastication in which she has briefly explained the necessity for properly chewing the food. The pupils have had an opportunity to give short statements of their own observations in this matter. The teacher then says: "Let us see now how we ought to chew our food. Suppose we have a breakfast party. Who is generally present at breakfast?"

The children: "Father, mother and the children."

The teacher: "Choose them, and meanwhile John and Mary will fix up some place for them to eat the breakfast."

As this lesson is on mastication no "set" table is needed. If the teacher has ready a slice of bread, a small piece can be quickly distributed to each "member of the family," who will *properly* masticate his food.

From such a lesson may grow another on the wisdom of taking time for meals, especially the breakfast and the noon meal when there is a temptation to hurry off to school.

Exercise on the Use of Tooth-brush

The preparatory lesson on the need for using a tooth-brush has been given, with simple directions for its use. The teacher has a new brush with which she illustrates her talk. Each child in turn, or as one of a small group, may come to the front and, "making believe" that it has a brush and a tumbler of water, may go through the motions of brushing the teeth up and down, from side to side, the back of the teeth and the tongue, and of rinsing the mouth.

Exercise in Conduct—Greeting the Teacher

A preparatory discussion in which the children take part has been given on the subject, "Greeting older people."

Several pupils leave the room and come in as if they were just coming from home.

First pupil: "Good morning, Miss Porter."

The teacher: "Good morning, Gertrude," etc., etc.

Exercise in Conduct—at the Dining Table

After a preparatory discussion of the different ways that various nations have of eating, the Chinese, the savage, etc., the children are led to see that the meal may be a happy and orderly and refined social event. Certain conventions are observed by all people. Some of our own conventions may be stated on the board as follows:

1. Do not eat fast.
2. Do not make a noise when eating soup.
3. Do not fill the mouth too full.
4. Do not smack the lips.
5. Do not open the mouth when chewing.
6. Wipe the mouth with a napkin.
7. Do not pick the teeth or put the fingers in the mouth at the table.
8. Carry food to the mouth with a fork or spoon.
9. Do not laugh with the mouth full of food.
10. Do not lean on the table with the body or arms; sit erect.
11. Do not make gestures with knife, fork or spoon.
12. Children should not talk too much at table.
13. Do not leave the table without asking permission of mother, or if mother is not present, of father.

These precepts may be brought into a dramatic exercise in which the children correct each other's imaginary mistakes or the "parents" correct the children.

The work of the teacher begins long before she reaches the schoolroom. The pupils will look upon her as a model, and little eyes are very sharp. If her clothes are untidy, her fingernails dirty, or her shoes rusty, the little folks will be the first to detect it, and they will wonder why she does not practice what she preaches, and will begin to doubt, perhaps, whether cleanliness is such a very necessary thing, after all.

**Teaching
cleanliness**

At least twice a week let her begin the day's work by an inspection of the pupils. If they are accustomed to line up outside the school building and march in, the inspection may take place in the school yard.

Inspection

For this purpose the children may be drawn up in one or two lines. Have the children in each line stand a foot apart with elbows at sides, forearms extended horizontally, palms down.

Pass down between the lines, examining to right and left each

child—head, face, teeth, neck, ears, hands, clothing. Each child may drop his hands to his sides as you pass him. The inspection must be made very carefully. Those who are untidy must step out of line and stand apart in a line by themselves to be dealt with later. After the inspection is finished those who have passed muster may march into the building; those in "Careless Row" may be given two or three minutes in which to correct their fault, with the understanding that it must not be repeated.

Those in "Careless Row" should receive special attention, and great care and considerable tact must be exercised. Much depends upon the community. In some places it would be a good thing to send them home with a note to the parents explaining the cause; or possibly with an older boy who could explain that the teacher insists upon cleanliness, that this is not the only careless child, and that all careless children are treated in the same way. But in districts where the attendance is light because parents are not anxious to keep their children in school, such a measure would fail to accomplish the desired result. In such a place the child's pride must be appealed to. Talk to him privately the first time; call his attention to the clean children; tell him how much better he would look, how much better he would feel. Give him a chance to grow out of his carelessness gradually. Get him out of "Careless Row" just as soon as he shows he is trying hard to do better. This method is recommended even when children are sent home to parents.

Inspection may be made in the schoolroom, if that is preferred, by rows; having the pupils rise, one row at a time, and stand in position in any open space in the room (front, back, or side).

As before stated, inspection should take place at least twice a week, and during the first month daily. Change the days each week so that the children may not know when to expect inspection. On days when formal inspection is not held the teacher should observe the children as they are sitting. If a child is untidy his attention should be called to his condition before he goes home, and he should be directed to be more careful the next time.

The assistance of the medical inspector should be sought in extreme cases.

Teeth Teach the children to clean the teeth every night. If a brush is used a little salt sprinkled on it will help to cleanse the

teeth. The salt is also good for the gums. With a brush plenty of water should be used.

See that the schoolroom is well swept, that the desks **Surroundings** are free from dirt, that the blackboards are frequently washed. It is not right to require the pupils to be clean if the cleanliness of their surroundings is not also looked after. A lack of order makes cleanliness difficult, to say nothing of the fact that carelessness in this respect makes for carelessness in the matter of personal cleanliness. Do not set things in corners. See that the bookcases are kept free from useless papers and trash. Use no decorations after they have become unsightly from an accumulation of dust and cobwebs. See that the children keep the floor clean of trash and papers all day long. Each one should be held responsible for the order of his own desk. The inside of desks should be regularly inspected. The children should be made partners with the teacher in these general responsibilities. They may make regular inspections and report, and assist in the care of the schoolroom.

Carry out the same principle in the yard and playground. Here the children will be especially glad to help. All they will need is direction. Teach them to pull up all unsightly weeds and never to throw papers and trash about.

The basement, if there is one, should also be kept in order; free from litter and trash. This is in the interests of health, safety, and good training. Here too children should help.

Never allow a pupil to spit on the floor, on the steps, in the halls, or anywhere else about the building. The spitting habit is unclean. If a child is troubled with a cold, teach him to leave the room when his cough is disturbing others.

Children even in primary grades should be trained **Eye-strain** to avoid eye-strain by moving when the sun shines on their work, by adjusting the shades or by changing their seats when they cannot see the blackboard, by moving nearer the window if there is a vacant seat on a dark day. *These acts of self-protection should become habits and should be done without the constant direction of the teacher.*

Manners are learned only by constant practice. The teaching of manners is not finished for the day when the formal lesson is at an end. An ever watchful eye

**Teaching
manners**

must be constantly kept upon the pupils, in work and in play, and prompt correction must be made in the right place. "Practice makes perfect" may be said just as truly of manners as of anything else.

Many of the forms of conduct are conventions that have come to be accepted by cultivated people. They do not involve questions of right and wrong. People of different nationalities differ in these particulars. Carrying food to the mouth with a fork is one of these conventions; taking off the hat rather than the shoes on entering the house is another. It is desirable that all children be taught those conventional forms of conduct that are fundamentally important, for these will help to make life move more smoothly for them. However, care should be taken not to discredit the home life of any child.

Conduct is a series of *problems* which are met with in our social relations. It is not so much the particular *form* with which a given conduct problem is solved, as it is the *spirit* and *intelligence* with which it is solved. For example, a pupil is sitting in the middle of the room and needs to leave. His problem is to leave in the way that will disturb the school least. If he has been well trained in "manners" he will look about to see by which path he can go with least disturbance. This path may take him to the back of the room and down a side aisle, while a direct path would lead him in front of a class or a visitor. Children may early realize this "problematical" nature of conduct.

A few definite directions for conduct it may be well for children to learn.

1. Do not look over another's shoulder to see what he is reading or writing without his permission.
2. Do not listen to the conversation of others without their knowledge.
3. Do not interrupt another person who is speaking.
4. Do not stare at strangers.
5. Do not laugh at the defects, or failures, or misfortunes of others.
6. Do not pick the teeth at table or in public.
7. Be cheerful.
8. Do not crowd in public places.
9. Do not leave home without saying good-bye.
10. Do not make a promise that you do not keep.
11. Keep your appointments.
12. Always do what you agree to do.
13. Always tell the truth.

1. Do not stand with your hands in your pockets.
2. Boys should rise when ladies enter the room and stand until they are seated.
3. Boys should open the door for ladies and allow them to enter first.
4. Boys should allow ladies to go down stairs first, but should precede them in going up stairs.
5. In any difficult situation, such as getting on and off cars, etc., boys should assist ladies.
6. Boys should take off their hats when they meet a lady they know.
7. When a lady drops anything a boy should pick it up for her.
8. A boy should take off his hat on entering a building where it is the custom for men not to wear hats—home, school, public hall, church, etc.
9. When walking with a lady a boy should offer to carry her packages or books.
10. A boy should in particular be polite to his mother, showing her at all times all the courtesies he would show to other women.

**Special
for
boys**

1. "Cleanliness is next to Godliness."

2. "Manners make the man."

Mottoes

3. "Politeness is to do and say the kindest thing in the kindest way."

4. "Dare to be true; nothing can need a lie."

5. "The honest penny is better than the stolen dollar."

6. "Do one act of kindness every day."

7. "Do your own work well."

8. "Work with the heart and work with the brain,
Work with the hands and work with the will."

9. "Work while you work,
And play while you play;
That is the way,
To be happy and gay."

10. "Kindness, justice, mercy to all."

"Play is just as necessary to the perfect development of the child as work is, and it affords an excellent opportunity for the teacher to become better acquainted with the pupils. On the playground the teacher has a chance to arouse and enliven the dull child, to teach fairness in play which involves truthfulness and honesty."

**Teaching
play**

"The presence of the teacher is just as necessary on the playground during play periods as it is in the schoolroom during recitation periods. Try to have the play spirit. Learn thoroughly some games both for the school yard and for indoors on rainy days."

The above truths are even more applicable to rural schools than to city schools, for many children in these schools live a somewhat isolated life and they peculiarly need the socializing values of the school games.

For games see Appendix C.

**Teaching
dangers and
emergencies**

"In these early grades the teacher can probably best convey the lesson by putting it into the form of a story. For instance, she wishes to teach the proper treatment of a cut. A story like the following might be told:

"John was a boy about ten years old. He had asked for a knife for a present for Christmas. Uncle Samuel gave him one, explaining how he was to use it, that he must never run with it when it was open, that he must always whittle *away* from his body and his hand; and he also showed him how to open and shut it so as to avoid cutting himself. 'What boy has a knife? Will you show us just how to use it correctly?'

"John did pretty well for a while, but he at last made a mistake and ran to his mother with a cut finger. It was bleeding badly, but that was not very important, for it showed John had good blood. His mother washed the cut clean with clear, warm water and then bathed it in arnica water, or she put on a little new skin and bound it up in a clean cloth.

"'Let us imagine some one has cut his finger. I will be mother first, then one of you can be mother.'"

All the danger and emergency treatment referred to for these grades may be taught in a similar way.

See Appendix F.

"Early instruction in the effects of alcohol and tobacco may be given for the sake of the lasting impressions produced by early training, and to head off cigarette smoking. We should realize that the small boy smokes not for narcotic effects, but to satisfy curiosity and love of excitement. Cigarettes, penny pipes, cornstalk, catalpa beans, cubeb and cinnamon cigarettes are pretty much in the same class."

See Appendix I.

See Appendix B, "The Janitor's Service," particularly II, "Suggestions to Teachers."

GRADES V AND VI

OUTLINE

Each pupil should have a textbook in which hygiene, rather than anatomy or physiology, is emphasized.

In these years pupils may in an elementary way learn about the structure of the body as a machine and about its working. The main purpose should still be to establish good habits of conduct, but in addition to give simple physiological reasons for the habit.

The following outline may be followed in the order given or points may be selected as the interest of the class or occasion may

make desirable, or the textbook may be taken as a guide, this outline being used for reviews.

Teachers having fifth grade only may take the first part of the outline; those having sixth grade only may take the second part.

Health of Body

I. Cleanliness and tidiness

1. Cleanliness of person
 - a. Skin—function, care
 - b. Hair—function, care
 - c. Nails—care
 - d. Teeth—function, care (emphasize this)
2. Cleanliness of clothes
 - a. Necessary soil of work and play
 - b. Unhealthful dirt
 - c. For health
 - d. For appearance
 - e. For association with others
 - f. Dry clothes—stockings, shoes, etc., handkerchief
3. Cleanliness of surroundings
 - a. Healthful and unhealthful dirt
 - b. Children's responsibility at home, at school, in public places
4. Reports and discussions of personal observations and practices under 1, 2, and 3

II. Self-control and prudence

1. Eating and use of food
 - a. General structure of eating and digesting apparatus (very simple)
 - b. Important parts of teeth (only enough to show the need of care)
 - c. Care of teeth
 - d. Mastication and digestion, absorption
 - e. Care of stomach and necessity for regularity of personal habits
 - f. Relation of quantity and quality of common varieties of food to comfort and growth
 - g. Care of foods and relation of germs and flies to decay
 - h. Self-control in eating; behavior at meals
2. Drinking
 - a. Demand of body for water
 - b. Purity of water; causes of impurity
 - c. Use of other drinks beside water—chocolate, tea, coffee, soda, alcohol, etc.; healthful, unhealthful
 - d. Use of cold and hot drinks
 - e. Self-control in drinking
 - f. Individual drinking cups

3. Sleeping
 - a. Need
 - b. Amount for children
 - c. Time
 - d. Conditions—alone, cover, air, position
4. Breathing
 - a. Structure of the breathing apparatus
 - b. Function and working of the breathing apparatus
 - c. Air—its use to plants and animals, freshness, purity, ventilation of sleeping room and school, airing garments
 - d. Responsibility for care of breathing apparatus (including nose) and for breathing good air

III. Exercise

1. Muscles
 - a. Structure and use
 - b. Kinds
 - c. Health
2. Time for exercise
 - a. Relation to meals
3. Amount of exercise
 - a. Importance of self-control
 - b. Importance of rest

IV. Special sense organs

1. Eye
 - a. Structure
 - b. Connection with brain (simple)
 - c. Eye-strains, causes (very important)
 - d. Eye-glasses, testing eyesight
 - e. Care of eyes, cleanliness, after illness, infection from rubbing or use of another's towel. Care of the eyes should be particularly emphasized, attention being called to the injurious effect of reading in a dim light, of reading fine print, of facing the light, of reading before breakfast
2. Ear
 - a. Structure
 - b. Connection with brain
 - c. Protecting ear drum
 - d. Care of ear, cleaning, keeping head clear of mucus during colds, improper blowing of nose, boxing the ears, after illness, causes of deafness, etc.
3. Nose
 - a. Structure
 - b. Use, for breathing, for smelling
 - c. Connection with brain
 - d. Adenoids
 - e. Protecting
 - f. Care, cleanliness, use of handkerchief

V. Blood

1. Use
2. Circulation, very general
3. Relation of food and air to blood
4. Effect of irregular personal habits on blood
5. Dangers of over exercise

Health of Mind

I. Nervous system

1. Brain, spinal column and nerves
 - a. General structure
 - b. Use, thinking, feeling, willing
2. Training
 - a. Industry
 - b. Accuracy
 - c. Perseverance
 - d. Patience
 - e. Self-reliance
 - f. Reliability, truthfulness, honesty
 - g. Self-control

NOTE. The nervous system should be treated very simply; a more detailed study is made later.

Social Relations

The lines of conduct referred to in "Grades I-IV" should be reinforced on all *opportune* occasions. The teacher will constantly note thoughtless conduct in the life of the school and as pupils are observed on the street. These pupils are not too old to be interested in studying these examples of ill-considered conduct as "conduct problems." They can discuss the various possible solutions of the problem and act them out together. They may thus select for themselves the best solution.

Loyalty may be developed into class and school "spirit" and it may be consciously applied in the family relations.

Patriotism will find its place for discussion and application at the time of **national holidays**. It will have its place also in relation to the town and its interests, the state and its interests, and the nation and its interests.

Preservation of Health

- I. Dangers of the home and school (see Appendix E)
- II. Dangers of the street (see Appendix E)

- III. Dangers of a general nature (see Appendix E)
- IV. Emergency treatment (see Appendix F)
- V. Alcohol, tobacco (see Appendix I)
- VI. Posture (see Appendix C)
- VII. Discuss with pupils the material in Appendix H (flies and mosquitoes) and lead them to suggest ways and means of combating the evils of flies and mosquitoes

Make this instruction clear and definite. Be sure to have an aim in this teaching.

NOTES

It is common in these grades for the hygiene lesson to be made an "oral reading" lesson accompanied by questions by the teacher, or a repetition or reproduction of the text by the pupils, each reciting in turn.

No teacher who understands the purpose of the lesson in hygiene will conduct it in this way.

The following ways are suggested:

1. The teacher may assign a chapter for silent reading with the request that each one make a list of words and expressions that are not understood and write any question that the book does not answer clearly. Give a definite limit of time for this reading.

2. Take up for discussion the words and expressions having passages in the textbook which, read aloud, would help in making the meaning clear.

3. If the teeth are under discussion, have them examine each other's teeth and draw the outline of them on the board and on paper. Let them tell about the baby's teeth at home, the cat's and dog's teeth, animals without teeth, etc.

4. For a week or two have daily reports by each pupil on care of the teeth.

5. It may be that this series of studies and discussions will have made the chapter serve its legitimate purpose, i. e., offer an occasion for intelligent discussion and a starting point for better treatment of the teeth together with some new information. In this case, it is time to pass to the next chapter.

If, however, the teacher wishes to bind together the discussions by an oral reading of the chapter, this may be done now—*after* the discussions—with intelligence and fluency.

The teacher may then read to the pupils Appendix D or such part of it as bears upon the care of the teeth.

The chapter may be approached in a very different way.

1. Before assigning the chapter to be read, before opening the books, let the teacher state the subject of the chapter. In an informal discussion let the pupils reveal what they already know. All disputed questions and

difficult words should be put upon the board for later study. Let the pupils themselves put on the board questions of their own which they would like to have answered.

2. Now let the pupils turn to their books, and by *silent study* for five to ten minutes find out what the chapter states on points or questions that have been raised.

3. Discuss these questions in the light of the chapter, reading passages that require it.

4. Make as many comparisons as possible between experience and the book statements.

It is seldom if ever profitable to conduct a hygiene lesson as a formal oral reading lesson. A hygiene textbook is not literature. It is for study, information and suggestion.

See Appendix B, "The Janitor's Service," particularly II "Suggestions to Teachers."

GRADES VII AND VIII

OUTLINE

Each pupil should have a textbook. This book should treat the subject from the viewpoint of hygiene rather than of anatomy and physiology.

I. Digestion

1. Organs

- a. Location (pharynx, gullet, stomach, intestines, liver)
- b. Special study of teeth
 - 1) Structure, causes and prevention of decay
 - 2) Deformities due to nasal obstruction (adenoids, bony growth, polypi, etc.)

2. Process

a. Steps

- 1) Mastication
- 2) Stomach digestion (gastric juice)
- 3) Intestinal digestion (bile and pancreatic juice)
- 4) Absorption

b. Constipation, diarrhœa

3. Food

- a. Purpose of nutrients and non-nutrients
- b. Preparation (animal and vegetable foods)
- c. Economy in buying and care as to wastefulness

NOTE. Give special emphasis to these topics in cooking classes.

II. Circulation

1. Organs: heart, arteries (pulse), capillaries, veins
2. Blood: description and uses
3. Hygiene: conditions for good blood (food, fresh air, sleep) and for good circulation (exercise and freedom from constant pressure)

III. Respiration

1. Respiratory organs: location (pharynx, larynx, trachea, bronchial tube, lungs); emphasize internal structure of nose, trachea and lungs
2. Process: emphasize enlargement of chest, expansion of lungs, inrush of air, and changes in air and blood
3. Hygiene
 - a. Breathing
 - 1) Importance of and hindrance to nose breathing
 - a. Turbinates, polypi and adenoids
 - b. Need of removal
 - 2) Importance and effect of posture and clothing upon deep breathing (tight clothing)
 - b. Air
 - 1) Relation of heat and fresh air, day and night, to health
 - 2) Changes caused by
 - a. Too high temperature
 - b. Fires
 - c. Lights; gas vs. electricity
 - d. Odors from body and environment
 - 3) Dry air
 - a. Need of moisture
 - b. How moistened
 - i. In public buildings
 - ii. In the home
 - c. Dust: dangers of
 - i. Ways of decreasing in school and home
 - ii. Show that there is living and lifeless dust, and that living dust consists of microscopic animals and plants (germs)
 - iii. Compare bacteria (plants) with other plants and show that the majority are helpful, only a few causing disease (tuberculosis, diphtheria, typhoid)
 - iv. Emphasize fresh air, sunlight, sleep and food as safeguards against harmful germs
 - v. Dusty occupations; kinds of dust

(See Appendix G)

IV. Excretion

1. Meaning (refer to work of skin and lungs)
2. Organs
 - a. Skin
 - b. Lungs
 - c. Location and function of the kidneys and bladder
3. Hygiene
 - a. Importance of the work of the kidneys, and its relation to skin activity
 - b. Value of water
 - c. Value of exercise
 - d. Necessity of regularity in excretory processes

V. Nervous system

1. Organs: general location
 - a. Structure: emphasize the soft, delicate character of nerve tissue, and need of careful protection
 - b. Function of brain, spinal cord and nerves
 - c. Education of the brain, spinal cord and nerves
 - 1) Book work
 - 2) Hand work
 - 3) Physical training
2. Hygiene
 - a. Effect of warm feet and warm bath on sleep
 - b. Value of work, rest, and recreation
 - c. Indications of and remedies for fatigue
 - d. Effect of emotions
 - e. Formation of a habit and its usefulness

VI. Physiological effects of exercise on

1. Muscles
2. Bone
3. Respiration
4. Circulation
 - a. Blood
 - b. Lymph
5. Digestion
6. Absorption
7. Excretions
8. Nervous system
9. Physiology of exercise; danger of certain games
10. Erect carriage, posture

VII. Alcohol and tobacco: effect on the vital processes, nervous system, mind, and character

VIII. Review of personal, home and public hygiene

1. Show the necessity for government action
 - a. Relation of the individual to the home, to the school, and to the community

- b. Dependence of the general welfare of society upon the individual
 - c. Duty of the government to promote the general welfare
 - 2. Show that certain laws pertaining to the public health should be national in scope, e. g., pure food laws, etc.
 - 3. Show that certain laws pertaining to the public health should be made by the State, e. g., infectious diseases of domestic animals, etc.
 - 4. Show that certain laws pertaining to the public health should be made by the city, e. g., building laws, etc.
- IX. Study of some public health problems
- 1. Food supply
 - a. Reasons for protection
 - 1) Adulteration; meaning and result
 - 2) Careless handling
 - 3) Flies and mosquitoes
 - b. Inspection by U. S. Government, state and local authorities
 - 1) Of milk
 - a. Importance
 - b. Modern requirements for the dairy and for handling
 - c. Results: on milk man, consumer, and general good health
 - 2) Of meat
 - a. Importance
 - b. Extent, animals, slaughter-houses, markets
 - c. Result
 - 3) Of fish; extent
 - 4) Of bakeries; sanitation
 - 5) Study of local health ordinance, relating to food inspection
 - 2. Water supply
 - a. In the cities and towns
 - 1) Source
 - 2) Pollution; danger and means of protection
 - a. Chemical treatment
 - b. Filtration plants
 - b. In the country
 - 1) Springs; dangers
 - 2) Wells; kinds, safest type and why
- X. Impure air
- Board of health regulations
 - 1. Ventilation and plumbing
 - 2. Sewerage
 - 3. Garbage and waste; flies
 - 4. Stabling and housing of animals; flies

- XI. Occupation diseases and dangers
- XII. Infectious diseases
 - 1. Ways of infection
 - a. Flies
 - b. Reason for antiseptic treatment of cuts
 - c. Reason for nose breathing
 - d. Cleanliness of hands in cooking and eating
 - 2. Means of protection: health reports; isolation
 - 3. Show relation of individual, home, school, and public to the transmission of infectious diseases
- XIII. Special school hygiene
 - 1. Study of school health conditions
 - a. Inside
 - b. Outside
 - 2. Comparison with standards
 - 3. Medical inspection
- XIV. Drugs
 - 1. Meaning
 - 2. Use; temporary only and under a physician's direction
 - 3. Types
 - a. Narcotics; effects of (see Appendix I)
 - 1) Opium, morphine, paregoric, soothing syrups
 - 2) Cocaine; soda fountains
 - 3) Tobacco
 - b. Alcohol (see Appendix I)
 - 1) Properties
 - 2) Value in arts and industries
 - 3) Effect of alcoholic beverages
 - a. Upon power of body to resist disease
 - b. Upon success in the industrial world
 - c. Upon poverty, crime and taxation
 - c. Patent medicines
 - d. Food adulterations
- XV. Accident and emergency treatment—"Safety first"
- XVI. Self-control and good manners
- XVII. Posture (see Appendix C)
- XVIII. Discuss with pupils the material in Appendix H (flies and mosquitoes) and lead them to suggest ways and means of combating the evils of flies and mosquitoes
- XIX. Do not neglect the care of eyes and teeth.

Make this instruction clear and definite. Be sure to have an aim in this teaching.

NOTES

Experiments suggested in textbooks should be carried out in the schoolrooms. It should not be assumed that the *description*

of what will happen, given a certain set of conditions, is enough. The pupil should *see* it happen. The experiments will be much more effective if performed by the pupils than if performed by the teacher.

When the action of bones and muscles is being studied suggest to the class that each one make out of wood, or wire, or cardboard a model of each kind of lever. Examples of each kind of lever action may be found in the body and also among the various mechanical activities in the community.

The action of **the valves in the veins** may be illustrated by a model made of wood or cardboard. Compare this action with that of an ordinary door, the gates in a canal lock, etc.

A ray of sunlight passing through a room reveals the dust floating in the air.

The using up of oxygen in combustion and the formation of water by combustion is easily shown by burning a candle under a glass.

The heating and ventilating system of the schoolroom and school building should be carefully studied, and drawings should be made to show the movement of air. This movement should be determined experimentally as a part of the study of hygiene. The action of the air, intake and outgo, may be tested under different conditions of temperature and wind. The general efficiency of the "system" may be determined. (Even a one-room building with an old fashioned stove and no provision for fresh air has a "system" that may be studied with profit by the class in hygiene.)

The mixing of liquids through a porous tissue may be easily illustrated by immersing an unglazed earthen jar filled with colored liquid, or a salt or sugar solution, in another jar of clear liquid. A bladder or other animal tissue will also illustrate this tendency of liquids.

The moisture in the breath may be gathered on a cool surface; the carbon dioxid in the breath may be revealed by breathing into lime water, and the temperature of the breath may be roughly indicated by breathing on a thermometer.

Several excellent arithmetical problems may be given during the study of ventilation and respiration: (1) Number of cubic feet (cubic yards) of air in the room? (2) Cubic feet (cubic yards) per pupil?

For investigation: (1) How much fresh air should each pupil have per hour (per minute)? (2) How often should air be changed in your room? etc.

Tendency of heated air to rise may be tested by placing thermometer near the floor, then near the ceiling.

During the study of eyes and ears some simple experiments in light and sound should be suggested to the class and some of these should be performed by the pupils.

A small microscope or magnifying glass will be most useful in the study of pores of the skin, hair roots, the larger bacteria in impure water, etc.

It is strongly urged that for every seventh and eighth grade class in hygiene there be provided at least one copy of a simple book on general science. This book should deal with every day physical and chemical phenomena.

When foods are being studied, samples of labels from bottles and cans may be brought into the class for study. This study may result in greater care throughout the community in the purchase of foodstuffs.

The force pump should be studied to illustrate the action of the heart.

The simple apparatus described in *The Human Mechanism*, by Hough and Sedgwick, page 169, simply and accurately illustrates the mechanisms of breathing. The apparatus might be made by seventh or eighth grade pupils.

The class discussions should raise many practical questions, which may be put to the class as problems. Some of these are:

1. How much sleep should a child of 14 years of age have? Quote authorities and reasons.
2. Should children under 14 years of age drink tea and coffee? Quote authorities and reasons.
3. Let each member of the class make a statement of the food and drink consumed in one day. Analyze it for its food constituents and estimate weight and bulk.
4. As a class exercise make out a hygiene "ration" for a day.
5. Committees might be formed as follows:
 - a. Light regulation. This committee should keep the shades in repair as well as assume responsibility for regulating the light.
 - b. Heat and ventilation; keeping thermometer records.
 - c. Schoolroom dusting with damp cloth.
 - d. Care of playgrounds.

The work done by these committees should be thought of as a part of the hygiene study. Negligence or indifferent work should reduce the school rating in this study.

Where feasible, selected or elected pupils in the hygiene class might be assigned the duty of school inspectors. These pupils should be allowed to carry out their inspections in school hours. The following questions or others formulated by the class might guide the inspection.

1. Are heat, light, ventilation, right and well regulated in each schoolroom in the building?
2. Are desks and seats adjusted to the pupils? Are the feet of any pupils dangling? What is the effect of this?
3. Report on the posture of the school children, sitting and standing.
4. What is anatomical effect of high heeled shoes?
5. What is source of drinking water of the school? Is the location and are the surroundings of this source of supply desirable or not? Why?
6. Why is spitting so universally condemned and punished by law? Is the law observed in this community?
7. What are the physiological effects of eating and drinking fast?
8. What is the proper clothing for indoors and outdoors at school?

These and many other questions will naturally be raised and should be assigned as a part of the hygiene lessons for *study* and discussion in class.

It is recommended that the girls of grades VII and VIII be given instruction in the care of babies and young children. These lessons may be given by the school nurse if there is one. The Parent-Teacher Club or the Women's Club of the town may properly undertake to provide special instruction if there is no school course.

This instruction should be simple and practical.

Parts of this pamphlet may profitably be read and discussed in class. This Department will supply on application, free of charge, a limited number for such use.

The Building Code and the School Laws of the State may also be had on application to this Department.

See Appendix B, The Janitor's Service, particularly II, Suggestions to Teachers.

By the end of the elementary school course: (1) pupils should have a working knowledge of the structure of the human body; (2) they should know in general how the various parts and or-

gans do their work; (3) they should know the conditions necessary to keep the body as a whole, and each part of it, in good working order; (4) they should understand the nature of contagion and know how to guard against harmful contagions; (5) they should know the sources of common dangers and be intelligent in the face of possible emergencies; (6) they should know something of the nature and value of foods and drinks; (7) they should know the nature of alcohol and tobacco, their effects on the growing organism and on society at large, and their probable effects on the mature person; (8) they should have an intelligent hygienic attitude toward themselves and the community; (9) they should know what is meant by "conserving" their physical and mental powers by self-control in all things; (10) they should be intelligently well-mannered in the common, every-day associations with each other and with their elders.

In addition to the textbook the class should have access to the various pamphlets on health issued by the National Department of Health, Washington, and the State Department of Health, Trenton. These are free for the asking.

The pamphlet publications of the Russell Sage Foundation, New York City, and those of the Health-Education League, Boston, are very inexpensive. They are readable and authoritative.

The following are especially recommended. The pupils themselves may write letters for these. Direct the letters to the Congressional Representatives of the district in which the school is situated.

U. S. Department of Agriculture, Washington, Farmer's Bulletin

No.

- 34. Meats: Composition and Cooking
- 63. Care of Milk on the Farm
- 85. Fish as Food
- 93. Sugar as Food
- 112, 389. Bread and Bread Making
- 121. Peas, Beans, Etc., as Food
- 126. Practical Suggestions for Farm Buildings
- 128. Eggs and Their Uses as Food
- 139. Household Tests for Butter
- 142. Nutrition and Economic Value of Food
- 175. Unfermented Grape Juice
- 182. Poultry as Food
- 249. Cereal Breakfast Foods

- 256. Preparation of Vegetables
- 270. Modern Conveniences for the Farm House
- 293. Use of Fruit as Food
- 295. Potatoes and Other Root Crops as Food
- 298. Food Value of Corn and Corn Products
- 332. Nuts and Their Uses as Food
- 359. Canning Vegetables in the Home
- 375. Care of Food in the Home
- 413. Care of Milk and Its Use in the Home
- 377. Harmfulness of Headache Mixtures
- 393. Habit-Forming Agents

Health-Education League, Boston

No.

- 1. Hints for Health in Hot Weather. 2 cents; \$1.50 per hundred
- 2. Milk. By Charles Harrington, M.D. 3 cents; \$1.50 per hundred
- 3. "Colds" and Their Prevention. 2 cents; \$1.50 per hundred
- 4. Meat and Drink. By Ellen H. Richards. 3 cents; \$2.50 per hundred
- 5. Healthful Homes. 4 cents; \$3 per hundred
- 6. The Successful Woman. By William R. Woodbury, M.D. 4 cents; \$2.50 per hundred
- 7. The Boy and the Cigarette. By H. Sterling Pomeroy, A.M., M.D. 5 cents; \$3 per hundred
- 8. The Care of Little Children. By R. W. Hastings, M.D. 4 cents; \$3 per hundred. (Especially good for seventh and eighth grade girls)
- 9. The Plague of Mosquitoes and Flies. 4 cents; \$3 per hundred
- 11. Tonics and Stimulants. By Ellen H. Richards. 2 cents; \$1.50 per hundred
- 12. Emergencies. By Marshall H. Bailey, M.D. 10 cents; \$6 per hundred
- 13. Microbes Good and Bad. By Anne Rogers Winslow. 4 cents; \$3 per hundred
- 14. The Efficient Worker. By Ellen H. Richards. 4 cents; \$2.75 per hundred
- 15. Sexual Hygiene. By an experienced physician. 4 cents; \$2.50 per hundred
- 16. Health in Labor Camps. 3 cents; \$1.75 per hundred
- 17. Tuberculosis (Consumption). By Edward O. Otis, M.D. 5 cents; \$2.50 per hundred
- 18. When to Call the Physician. By George W. Gay, M.D. 4 cents; \$2.50 per hundred
- 19. Habits of Health. By Paul W. Goldsbury, M.D. 4 cents; \$2.50 per hundred
- 20. Wastes and Their Disposal. By Henry J. Barnes, M.D. 4 cents; \$2.50 per hundred
- 21. Typhoid Fever, Infection and Prevention. By Mary Hinman Abel. 5 cents; \$3 per hundred

22. The Observance of Health Day in Schools. By Thomas F. Harrington, M.D. 4 cents; \$2.50 per hundred
23. Industrial Hygiene. By Prof. C. E. A. Winslow. 7 cents; \$4.50 per hundred
24. Hygiene for Workers. Bulletin No. 1. 6 cents; \$4 per hundred
25. Hygiene of Exercise. By Anna Leonard Muzzey. 5 cents; \$3 per hundred
26. Nerve Waste. By George Van Ness Dearborn, M.D. 7 cents; \$4.50 per hundred

NOTE. The textbook and these pamphlets should be supplemented by newspaper and magazine articles and by discussion of local health interests.

SUGGESTIONS FOR THE EXTENSION OF INSTRUCTION IN HYGIENE IN THE HIGH SCHOOL

Although what has been said in the preceding pages refers particularly to instruction in hygiene in the elementary grades, it must not be supposed that teaching this vital subject ends there. For many pupils school life does not close with the eighth year, and instruction in personal and civic hygiene should be a part of the program of studies of the high school. Although the instruction here may be made less formal, it is not to be considered less important.

Principals and teachers in the high school should have a working knowledge of the contents of this bulletin, so that the many opportunities which will occur for presenting its facts and suggested practices may be utilized. Indeed, it would be unfortunate if this bulletin were used only in the elementary school. Not only should some of the main facts of the subject of hygiene presented in the courses of study be emphasized in the high school, but much of the subject material of hygiene found in the appendices should be treated in high school classes. The preservation and conservation of health should be a vital feature of the instruction in high schools as well as in elementary schools.

Among the different means of emphasizing hygienic truths and the value of health and vitality are:

1. Systematic physical training, indoors and out, for both boys and girls.

2. Talks on personal hygiene, including proper habits of sleep, eating, study and social relaxation. These may be given either at stated periods, or incidentally with special exercises and athletic activities. Pupils may thus be led to realize in a very concrete way the necessity of desirable habits which make for health, morality and general physical well-being.

3. The use of lantern slides, including moving pictures, wherever available. These are especially valuable in making concrete the dangers due to flies and mosquitoes.

4. Supervision and control of interscholastic and interclass athletics. Through these sports physical standards and moral standards can be taught most effectively and pupils brought to a vivid realization of the relation between physical condition and athletic results.

5. By cooperation with civic associations, home and school associations, boards of health, women's clubs, medical inspectors, and charitable organizations, the high school, representing the highest educational interests in the community, may become a center for the dissemination of hygienic knowledge. The following topics for lectures indicate lines of interest:

Safety in travel, together with exhibits of safety appliances

Home and community sanitation

The fly and the mosquito

Tuberculosis and other contagious diseases, supplemented by exhibits

Water supply of the community

Milk supply of the municipality

Pure food

6. By having the classes in biology and physiology assume the responsibility in connection with the proper school officials for the lectures and exhibits suggested above. Last year nearly 800 pupils were studying physiology in the high schools of the State, and about 5000 other high school pupils were studying some phase of life science. Through these pupils hygienic practices in many homes should be affected.

7. By keeping constantly before pupils the fact that the aim of instruction in hygiene is to exalt the physical and moral worth of vitality, which carries with it poise, orderly association, and an attitude of self-control.

8. By dividing with the pupils the responsibility in maintaining

proper temperature, ventilation, and general hygienic conditions in the school building and on the grounds.

More detailed directions are not given here, since many opportunities will occur to the alert teacher. The effect of the instruction will depend very largely upon the development of the plans from the actual school and community conditions, and the formulation of real problems in hygiene by the pupils themselves.

Attention is called to the fact that throughout the entire school life of the pupil his physical condition is of most vital concern, not only for academic and business success but also for his future happiness as a morally clean and physically sound citizen.

See Appendix B, The Janitor's Service, particularly II, Suggestions to Teachers.

APPENDICES

The following Appendices are given for the information of teachers and others. They contain information that should be generally known, and the teacher in any grade will find some of it valuable for discussion with her pupils.

APPENDIX A

MEDICAL INSPECTION

The addition of medical inspection to the public school system, and its evolution from formal inspection for the discovery of contagious disease cases to the search for and treatment of all ailments of school children is a natural result of the conception that in a democracy the health of the citizens is of first importance, and that through the school, which all children must attend, physical disabilities may best be discovered and remedies be recommended and applied.

All civilized countries are accepting this view, that during the period of growth the health of the citizenship should be established.

This new piece of work cannot be done in the best way all at once. As experience points the way there will be improvement.

1. The general practitioner will give place in medical inspection to the doctor who has made a special study of the school health problem.
2. Medical inspection will become more scientific and systematic.
3. The school nurse will become assistant to the physician in the school, as she is in the home, taking over that part of the work that does not require the physician's personal attention.
4. School clinics for the care of the teeth and for minor surgical treatment will be established.
5. The dentist will be charged with inspection and care of the teeth.

That all these tendencies are in evidence in this State is shown by the following table:

School Medical Inspectors.....	549
School Nurses	34
School Surgical Clinics	1
School Dental Clinics.....	4
Free Dental Clinics (not connected with school).....	6

In Bulletin (1913) No. 44, entitled *Organized Health Work in Schools*, issued by the United States Bureau of Education, the following is said regarding the school nurse:

Medical inspection has rendered the school nurse inevitable. When the doctor was brought into the schools he faced a new and difficult situation. The school doctor's helplessness has been vividly described by Dr. Hayward, of England, as follows:

"As a doctor I felt quite stranded in the strange atmosphere of an elementary school, coming into contact not so much with actual illness as with the primary conditions which produce and foster it—dirt, neglect, improper feeding, malnutrition, insufficient clothing, suppurating ears, defective sight, verminous children, the impossibility of getting adequate information from the children, or a knowledge of their home conditions, and nobody to whom one could give directions or who could help in examining the children. The only means of approaching the parents was to send an official notice that such or such a condition required treatment. My duties began and ceased with endless notifications, and there it all stopped, as very little notice was taken of them."

This has been the experience everywhere. Without an effective follow-up service conducted by visiting nurses, medical inspection is ineffective. Until 1908 New York City relied upon postal cards sent to parents of defective children, and was able to secure action in only 6 per cent of the cases where treatment was recommended. Immediately upon placing the follow-up service in the hands of school nurses the percentage increased to 84. This brought treatment to nearly 200,000 additional pupils.

In a word, the difference between medical inspection without and medical inspection with school nurses is almost exactly the difference between mere diagnosis and cure. As expressed by Jane Addams (*American Journal of Nursing*, 1908):

"The best of medical inspection succeeds only in sending the child home; they say that such and such a child would have a bad effect on the other children, and therefore he is sent back to the family physician for treatment. In most cases a family physician is not called in, because, in the words of Artemus Ward: 'There ain't none,' and therefore the child is kept out indefinitely, and the public school, so far as that child is concerned, is doing nothing, and the child continues to play in the alley and on the street or sit in the doors of the tenement with the rest of them. This is the whole idea—that medical inspection was succeeded and almost transposed by the addition of the visiting nurse. The medical inspection got the child out of school and the visiting nurse got the child back. It seems almost foolish to have medical inspection without the visiting nurse."

Again, the school nurse becomes an invaluable assistant in the teaching of hygiene to pupils. Every pupil ought to have more expert instruction on such subjects as home nursing and first aid in emergencies than the average teacher can be reasonably expected to give. This deserves a special place in the seventh and eighth grades. In the matter of sex hygiene, too, the school nurse can give much personal advice and instruction to the older girls. The nurse, more than almost any other social worker, sees the dreadful havoc wrought by ignorance of the laws of sex. She becomes vividly impressed with the necessity of such teaching as will supply to young girls the power and motive for self-protection. Girls are willing to consult her the more readily because they realize that this is an every-day subject with her.

The school nurse, like the municipal district nurse, is first and last a social worker. Important as are her duties in the school, her ministrations and educative influence in the home are still more valuable. She instructs ignorant, but fond mothers in the best methods of feeding, clothing, and caring for their children. In many a family she becomes a spiritual adviser, pointing out not only inadequate sanitation which keeps them sick, but also educating them on the folly of cutthroat chattel mortgages, unnecessary furniture purchased at ruinous prices on the installment plan, the short-sighted policy of taking children prematurely out of school to work, etc. All this is especially important in the Americanization of the ignorant foreign-born population.

Rural school

Thus far the institution of school nursing has not spread to rural communities in the United States, though it has done so to a certain extent in England. This cannot be attributed to any lack of need, but only to the greater expense and other obstacles incident to a more scattered population. As our country districts become more densely populated, and as they resort more often to school consolidation, the nurse will here also become a necessary part of the school equipment.

Training of nurses

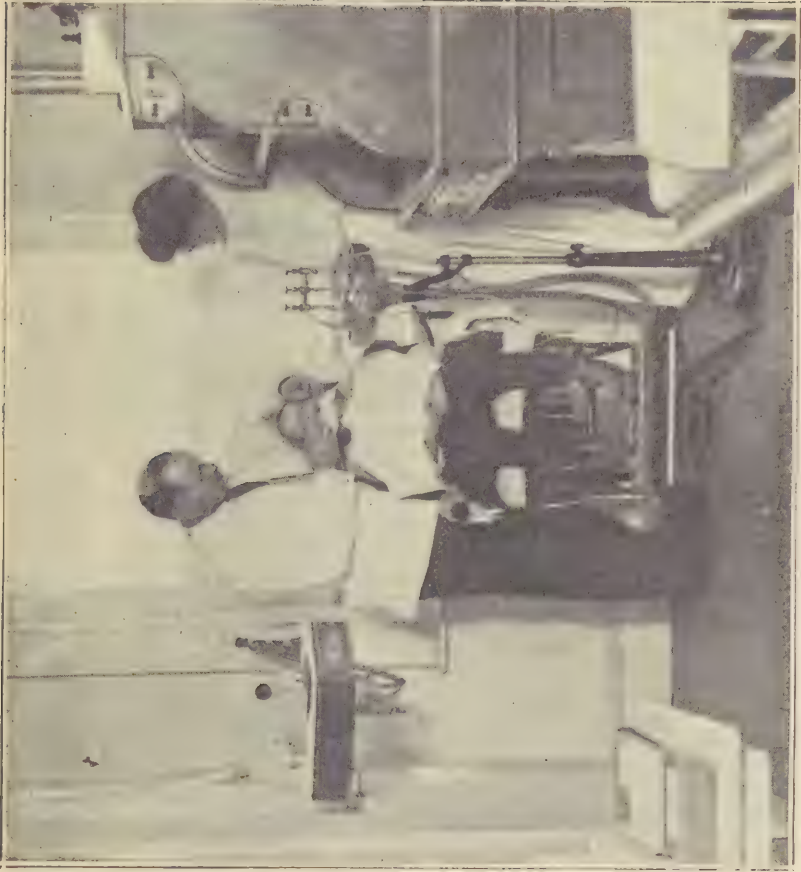
With the rapid multiplication of school nurses, the desirability of special professional training for them will become more and more obvious. Teachers College, Columbia University, has already introduced a one-year course for this purpose, designed to follow the usual two-year training for nurses.



Hoboken Public Schools

FREE MEDICAL CLINIC

This clinic was established November 15, 1912, for needy and deserving pupils of the Public Schools. It is open to Public School pupils three afternoons each week. During the past year, 812 patients were treated and 67 operations were performed for adenoids, enlarged tonsils, etc.



Englewood Dental Clinic

Physicians for less than one hour a day cost about half what nurses cost for full time five and a half days a week.

A well-trained school nurse who has the study habit can also make the physical examinations and record the findings on a historical card for each pupil, especially for ailments and defects of ears, eyes, nose, mouth, throat, skin, scalp, malnutrition and nervousness, including about 97 per cent of the ailments.

Cost of nurses

It is often desirable to send home a notice calling attention to a physical defect. Such a notice should be general in character, as the teacher is not a medical expert. The following form is suggested. It should always be signed by the principal, if there is one.

Notice

To the parent of.....

The teacher of this child has reason to believe that he is suffering from physical defects, serious enough to need attention. An examination by your family physician or dentist is, therefore, advised.

For further detail you are invited to call at the office of the principal at any time you may find it convenient.

Very sincerely yours,

.....
Principal of School

NOTES

The only school surgical clinic in the State is at Hoboken.

The school dental clinics are at Atlantic City, Hoboken, Englewood and Middletown.

Free dental and surgical treatment is given in needy cases in many hospitals in the State.

In some cases nurses are employed by some local organization. In Newark the number of medical inspectors has been reduced and the number of nurses increased.

The rules and regulations of the State Board of Education regarding Medical Inspection may be had on application to the Department of Public Instruction.

Health and Medical Inspection of School Children, by Dr. Walter S. Cornell, director of medical inspection, Philadelphia, is the latest and most complete treatment of this subject in this country. It is published by F. A. Davis Co., Philadelphia; price, \$3.

Medical Examination of Schools and Scholars, edited by Dr. T. N. Kely-nack, is the latest summary of school medical inspection practice in England. Published by P. S. King & Son, Westminster, England.

APPENDIX B

I. THE JANITOR'S SERVICE

Dr. Dressler, specialist in school hygiene and school sanitation, United States Bureau of Education, has well stated the importance and the duties of the janitor in the following words:

A superintendent of wide experience, one who has charge of many hundreds of teachers, has recently said: "Next to the principal, the janitor can become the most important personage in a city school." This is not putting it too strongly, but it is almost impossible to get the average school board to take this view. At present the janitor is frequently appointed to his place by ward politics and kept there by the same influence. This condition of affairs must cease, and to this end, school boards and school principals must be educated. The janitor is a school officer, and has to do in a vital way with the health, morals and progress of the children, and should be nominated by the principal in conference with the superintendent, and without such nomination no one should be eligible for appointment.

**General
importance
of a good
janitor**

It should be the duty of a janitor to keep himself posted on all things pertaining to his profession. Books and magazines ought to be furnished him wherein he can learn of new and better devices for doing his work, and so come to take a real professional interest in his calling. A man who has nothing to commend him but poverty and political pull will seldom make any progress, and is apt to degenerate. You cannot depend on such a one voluntarily to disinfect a room when infectious diseases suddenly appear. Neither can you count on him to make any experiments looking toward better care of the floors, walls, and toilets. He will do things in a routine way despite changing conditions.

**Professional
qualifications
of a school
janitor**

Such in brief are some of the general qualifications of a public school janitor, and the sooner school boards appreciate the importance of them, the less will the health of the children be endangered. It is needless to say that such qualifications demand good pay, and that tenure of position should be secure to those who fully satisfy the demands.

Some specific directions to school janitors. 1. All wooden floors should be thoroughly cleaned, disinfected, and waxed at least twice a year, or if the floor is so conditioned that it is not best to use wax, a thin coating of "dustless oil" should be carefully spread over it. Dustless oil has proved itself very useful, and the opposition to it has come about almost wholly because, through careless application of it, skirts have been needlessly soiled or ruined. When it is of the proper consistency and properly applied, such a floor dressing will not only preserve the floors and prevent dust from flying, but will also serve as a useful disinfectant or hindrance.

2. Before sweeping any floor, there should be scattered over it a sufficient supply of dampened sawdust, bits of dampened blotting paper, or some preparation of sawdust and distillate, to catch and hold the dust. It is not only dangerous to allow dust from the floors to rise in the air, but it necessitates almost double work to keep furniture and books clean. Such preparations as "Dust Clean" and other similar combinations seem to answer the purpose. But if funds will not permit investment in such preparations, dampened sawdust is nearly always available at a minimum of expense and is an effective dust gatherer.

3. It is better to use fiber or hair brush broom for sweeping, for these do not lift the dust in the air, and they can be better managed among the desks than the ordinary brooms.

4. Feather dusters are a delusion and a snare. They of course save time, but they are very objectionable in that they stir up the dust and never remove it. Dust cloths are far more effective, and each room should have a good supply of these at hand. One good dusting with a cloth is worth three with a feather duster. It is, however, only a matter of a short time until all large city schools will be supplied with apparatus for removing dust by suction, and all new buildings ought to be arranged to anticipate this method of sanitation.

5. The janitor should call the attention of the teachers to the condition of the desks at the beginning of each term and with them help to make each child responsible for all rough usage or ink spots. Clean desks give a dignity and a tone of refinement to a schoolroom that is easily lost if such care is not exercised.

6. Chalk erasers should be thoroughly cleaned at least once a week for all rooms, and as much oftener for the higher grades as the necessities of the case demand. They ought to be taken out of the rooms for this cleaning. Where vacuum cleaners are installed, erasers can be thoroughly cleaned by suction. Chalk troughs should be kept clean of dust, otherwise any possible draft will scatter some of it through the air of the room. Damp sponges are useful for this purpose. This rasping dust is very irritating to the mucous membrane of the air passages, and may in this way become dangerous to the health of the children and teachers.

7. The blackboards should be sponged clean as often as their use necessitates. But they should never be water-soaked or left streaked.

8. Window shades should be kept in repair so that when drawn they will fit closely to the window frames. Simple repairs may often be made by pupils. The shades should be rolled up every evening in order that the rooms may be thoroughly flooded with light and get the advantage of any sunlight available between sessions, and also to keep them from curling at the sides.

9. School benches should be securely fastened to the floor and properly placed and correctly placed. The following directions for placing and spacing desks will give in nearly all cases the best results for a room 32 by 24 feet. In rooms for the sixth, seventh and eighth grades:

a. Leave an aisle 2 feet wide next to the windows, and one 3 feet wide between the rear wall and the rear seats, and make the aisles between the rows of desks from front to rear 22 inches wide. Place all desks so that a vertical line dropped from the inner edge of the desk top will strike the seat 2 inches back of its outer edge. Keep the rows straight, looking from the front to the rear. No regular schoolroom of this size and for these grades should be arranged to accommodate more than 40 or 45 pupils.

b. If two or more sizes of desks are to be used, those designed for the smaller pupils should be placed near the windows and, if possible, toward the front of the room. Young children need the best light, the best opportunity to hear the teacher, and the best position to see the board work or any charts the teacher may see fit to display in the front of the room.

c. The teacher's desk should be placed at the end of the room in front of the children, and nearer to the inner side than to the window side. This method of placing the desks will allow 45 desks designed to suit pupils of these grades. That is, it will accommodate 5 rows, each with 9 desks, and leave an aisle next the blackboard wall opposite the windows 4 feet 8 inches wide clear of the chalk trough, and one from 6 to 7 feet wide in front. (The exact width of the front aisle cannot be given because of the variations in the depth of the different styles of desks now on the market.)

d. In rooms for the fourth and fifth grades, leave an aisle 2 feet wide next to the windows, one 4 feet wide between the rear wall and the rear

seats and make the aisles between the rows of desks from front to rear 20 inches wide. This placing will allow 6 rows of desks 20 inches wide and at the same time allow an aisle $3\frac{1}{2}$ feet wide clear of the chalk trough next to the wall opposite the windows. If the desks to be used for these grades are more than 21 inches wide, the spacing should be made for 5 rows of desks, instead of 6, otherwise there would not be sufficient aisle space next the blackboard opposite the windows. This arrangement will permit 9 desks in each row and leave plenty of room in front.

e. When placing the desks in rooms for the first, second, and third grades, leave an aisle of 2 feet next the window side, one $4\frac{1}{2}$ feet wide between the rear wall and the rear seats, and make the aisles 19 inches wide between the rows of desks. This arrangement will permit 6 rows of desks 18 inches wide and leave an aisle next the blackboard opposite the windows $4\frac{1}{2}$ feet wide clear of the chalk trough. It will also allow 9 desks in each row and leave space in the front for sand trays and the teacher's desk. But 50 desks should never be placed in any one room, for this number of pupils is too great for one teacher to handle and do justice to all concerned.

f. In all cases where the rooms are larger or smaller than 24 by 32, the aisle next the windows should not be more than 2 feet wide, otherwise some of the children will be too far removed from the light. The aisle between the rear wall and the rear seats should be as wide as possible in order to get the pupils near the teacher's desk and blackboard, for this will insure better light and make it easier for the pupils to hear the teacher and to see the work on the front blackboard, and it will also aid the teacher in her management.

g. The teacher's desk should be small and placed at a point at least three-fifths of the width of the room away from the window side. This position will, as far as possible, cause all the children in the room to face away from the light when attending to the teacher. The teacher ought not to complain, for while this position of her desk will cause her to face the light more squarely, she should be willing to do this instead of exacting it of many children, especially since she spends but a small part of the time during the session at her desk.

10. Clear windows give a buoyant atmosphere to the schoolroom and at the same time tend to set standards for the home. A full and generous equipment of materials and appliances should be furnished every janitor in order to make it as easy and as safe as possible for him to keep the windows in good condition. In such details school boards ought not to be niggardly. Janitor's excuses often stand in the way of efficient service.

11. Keep the fires going day and night in the stacks connected with the closets, if such a method of ventilation is used, in order that no odors may escape into the building. It is not enough to build a fire in the morning and let it die out toward the close of the day. There must be a constant draft through these stacks. Bank these fires in the evening so that throughout the night fires will be kept going and reverse currents will be prevented.

12. If the building is supplied with automatic flush tanks, they should be set to operate oftener during school hours than at night, for any wasteful use of water will lead school boards to limit the supply. Especial care should be taken to see that all closets are thoroughly flushed immediately after the close of intermissions. Some janitor or teacher would do a good service by inventing a flush tank capable of being regulated by the program clock and thus avoid the danger of neglect and at the same time save the expense of a useless waste of water.

13. No crumbs of bread or food of any sort should be scattered in the building to tempt rats or mice. Keep these pests out at all hazards, for they are dangerous. They carry contagious diseases and are frequently instrumental in causing fires.

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13. No crumbs of bread or food of any sort should be scattered in the building to tempt rats or mice. Keep these pests out at all hazards, for they are dangerous. They carry contagious diseases and are frequently instrumental in causing fires.

14. Burn all waste paper each day, for its accumulation anywhere in the building means danger. It is far better to spend a little money for kindling of a less inflammable nature than to attempt to save by storing waste paper. The furnaces are the safest places in which to burn this material.

15. Inspect all fire fighting appliances at least once a week to see that they are in good condition and ready for any emergency.

16. The walls of all rooms and halls should be swept clean of dust and cobwebs as often as exigencies demand, but at least three times a term. For this purpose special brushes should be employed and care taken to prevent any smudging or discoloration of the walls. It is a good plan for a principal in conference with the janitor to set definite dates for these special cleanings and to make, at the invitation of the janitor, formal and critical inspection of the building immediately thereafter. A little military formality in such matters is sometimes very helpful.

17. Plenty of mats, scrapers, and other practical means of removing mud from the shoes of the children before they enter the schoolroom will save much time in sweeping and dusting and greatly reduce the wear and tear of the floors. Even in dry weather an amazing amount of sand and grit will cling to the children's shoes while on the playground, and if no opportunity is furnished for removing it before the schoolrooms are entered, it will be loosened and dropped on the floors beneath the desks. Time and money are well spent in teaching children to maintain cleanly habits, and to preserve public health and public buildings. The janitor must be given authority over the children in this and other matters relating to the care of the building.

18. In fire drills the janitor ought to have a definite program to follow, so that in any emergency he will have his duty clearly in mind, and know how to perform it most expeditiously and effectively. He ought to throw open and firmly fasten the doors of the main exits and then hasten to the fire hose. Some of the larger boys can be designated to assist with the doors and in this way help to lessen the danger in case of necessity. It is the duty of each principal to organize the fire drill in all its details and to see that each one knows by practice exactly what he is expected to do.

19. In the case of electrical storms, all external electric wires connecting with the school building should be "grounded," and during the storm season this should be done every evening after school and connections remade in the morning. This precaution, of course, will not be necessary where there is no doubt as to the safety of insulation, or of the fuses provided. Pains-taking precaution in such matters is worthy of official recognition.

20. A janitor has a right to the schoolroom immediately after school, for if he is delayed in getting started at his work it will be necessary to slight some part of it. A program for sweeping should be worked out with the principal, and all the teachers and pupils should respect it. Carefulness in these matters will prevent much trouble and insure better hygienic conditions. A janitor's day is necessarily long, but he must not be overburdened through the thoughtlessness of others.

It is too commonly the practice in rural school districts to consider the care of school buildings of little or no importance. While a teacher will herself clean the building and enlist the help of her pupils rather than live in untidy surroundings, yet this should not be required or expected of her. A small addition of five or ten dollars to the teacher's pay during the winter months is not a proper way to solve this problem. The employment of a man or woman living in the neighborhood to give a minimum of janitor's service for a pittance is seldom satisfactory.

In a rural district a competent man could be employed to give his entire time during the year to the care and upkeep of the school property in the district. This district janitor could sweep and clean every schoolroom once a week, keep the yard free from unsightly piles of ashes, care for the out-houses and make light repairs. During the vacations the buildings could be cleaned more thoroughly. In general he would be responsible for the per-

formance of the duties previously enumerated. Such a janitor should be responsible to the supervising principal and make regular reports to him. The daily cleaning, dusting, care of fires, etc., would still devolve on the teacher and pupils.

II. SUGGESTIONS TO TEACHERS ON JANITOR SERVICE

The following is a Summary of Recommendations by the Committee on Janitor Service, Department of Science Instruction, National Education Association, July, 1913:

To standardize janitor service, or school housekeeping, the first step is to get the facts. Every building, as every room in it, has its own conditions to be learned and controlled.

This can be done with least expense and greatest effectiveness by enlisting pupils' cooperation. Expense is negligible. Effectiveness is along three lines: (1) practically constant supervision which good housekeepers find indispensable; (2) permanent records of sanitary details in place of guesses and opinions; (3) interest of future voters and home-makers in such details by practice in regulating them.

Appoint a group of health officers in each classroom, for periods so limited that each child has service once a year. Credit their work to physiology and hygiene, nature study, domestic science, physics, chemistry, or biology.

**Health
officers**

Health officers shall read thermometers hourly, record readings in a substantial book, chart them (e. g. nurses' clinical charts) on a blackboard reserved for it, where pupils, principal, janitor, and visitors can see perhaps a week's record at a glance. When conditions permit they shall readjust heat sources, ventilators or windows to secure proper temperature which, when artificial heat is used, should never exceed 68 degrees Fahrenheit. Pupils over eight years of age can do this; sometimes younger.

Temperature

In high schools health officers can measure or estimate it by cultures, or by the "sugar method" recommended by the Committee on Standard Methods for the Examination of Air. The standard is 2000 particles (visible under a two-thirds inch objective) to a cubic inch of air.

Dustiness

In elementary grades they can wipe surfaces with a clean cloth. If dusting was properly done, nothing is wiped off. Floor, woodwork and furnishings should be as immaculate as in the best kept home or hospital. This test should come at the beginning of the session.

Health officers should be responsible for the moist erasing of chalk, but pupils should not be required to dust rooms. Officers should record sweeping of room or corridor while pupils or teachers are obliged to use the rooms. (Severe penalties for this violation of sanitary rights should be enforced by school boards.)

Elementary pupils over eight years of age can do this, including record keeping.

Officers over eleven years of age can be taught to use safely the whirling wet-dry bulb thermometer recommended by the U. S. Weather Bureau. The danger of breaking is lessened by tying to the back a stick projecting a few inches beyond the bulbs. One instrument is enough for an ordinary building. Relative humidity should be recorded and charted about a half hour after the session opens. It can well be done later also. Where possible, officers shall

**Relative
humidity**

readjust artificial sources of humidity (evaporating pans, steam radiators, etc.) or windows, to maintain relative humidity at 50 per cent.

Air currents When ventilating flues have no current indicators of their own, officers should measure currents with an anemometer (one is enough for the usual building) or estimate them with candle or joss stick. Pupils over eleven can use them, perhaps younger. The effectiveness of air currents is best learned by comparing the smell of school-room air with that out of doors—the standard of freshness. Air currents and freshness should be recorded at least once at the middle of each session. Officers should make such readjustments of windows or ventilators as indicated.

Cleanliness Cleanliness of wash-bowls, water-closets, and any other part of building or yard should be recorded once each session. Dirt on windows sometimes diminishes illumination one quarter to one third, measured by a photometer. The instrument is costly, and until a less expensive method is devised the opinion of health officers can be given. Dirty windows are important in rooms badly ventilated or specially exposed to smoke and dust. Such windows sometimes need washing once in two weeks. Pupils over eleven, possibly younger, can do this reporting.

General suggestions Health officers from older grades can be appointed for rooms where pupils are too young for any special detail. When a fault is found beyond pupils' function to remedy, it should be reported immediately to the proper authority, probably the principal. It is wise never to "interfere with the janitor." This report and the result following should be stated in "Health Officers' Permanent Records."

For other than classrooms and for corridors groups can be specially appointed, their duties being suitably modified.

Some if not all of these exercises in practical sanitation can be undertaken quietly at any time by any teacher in charge of any room. One or another has already proved practicable in individual schools within the last ten years. The accumulated data will be invaluable. It is the practical first step in reducing "school diseases," including tuberculosis, which increases all through school years (except in open air schools) and among teachers has a mortality rate higher than among the general public.

APPENDIX C

I. PHYSICAL EDUCATION

The following has been prepared by a Committee of Directors of Physical Training consisting of:

MR. RANDALL D. WARDEN, *Chairman*, Newark

MISS GARETTA K. SYER, East Orange

MR. SPENCER M. BENNETT, Atlantic City

Physical education has for its principal objects development of organic vigor and inculcation of habits of good posture and daily control by means of corrective work, schoolroom gymnastics, class work in the gymnasium, free play and organized play, dancing, tactics, etc.

Physical training, also, through the promotion and supervision of organized team athletics, aids in physical development and affords training in alertness, intense application, vigorous exertion, loyalty, obedience to law and order, self-control, self-sacrifice, and respect for the rights of others.

Physical education in schools consists mainly of exercises of free-standing movements given in aisles of the classroom. Most systems include short two-minute setting-up exercises which are given frequently for correcting bad posture, and to furnish partial relief from tiring positions, in ill-fitting school desks, and badly ventilated rooms.

In some cities, provision has been made for school gymnasiums, and under these conditions the training consists largely of work with light and heavy apparatus, added to free-standing movements.

Corrective exercises, hygienic exercises, and recreational exercises are usually given in most types of school gymnastics.

Tactics consist of all types of marching exercises:

Tactics

1. Wheeling in 2's, 4's, and 8's
2. Counter-marching of files, 2's, 4's, etc.
3. Right, left, half right, half left, and about facings
4. Marching to the rear
5. Change step
6. Figure marching, etc.

These exercises are used to introduce the gymnastic lesson, and are mainly of service to place the class in open order preparatory for the free-standing exercises which follow.

There are many types of free-standing exercises used in the schools of this country. It would be impossible to set forth, in the short space allotted, any given type of this work. By applying to the boards of education of various cities in this and other states, syllabi of physical training may be obtained. The cities of Newark, East Orange, Atlantic City, Camden, and Trenton have outlines that will give excellent help. Outlines may also be obtained from the cities of New York, Boston, Philadelphia, Chicago, and St. Louis.

**Free
standing
movements**

These are exercises taken either in the free-standing position or with the aid of apparatus, and should be of a vigorous type, devised to exercise large muscle groups, and to give vigorous action to the circulatory, lymphatic, and respiratory systems.

**Hygienic
exercises**

- Recreative exercises** Recreative exercises are given in the form of:
1. Games
 2. Team competition
 3. Folk dancing
 4. Athletics

A suitable book for games and team competition—
Games for the Home, School, Playground and Gymnasium by J. H. Bancroft. Macmillan Co. \$1.50.

Other books are:

Folk Dances, by C. Crampton. Barnes & Co. \$1.50.

Folk Dances and Singing Games, by E. Burchenal. A. Shirmer. \$1.50.

Folk Dances and Games, by C. Crawford. Barnes & Co. \$1.50.

Old and New Children's Singing Games, by M. R. Hofer. A. Flannigan & Co. 50 cents, paper.

Athletics Those interested in organized public school athletics are referred to:

1. Official Hand Book of the Newark Public School Athletic Association

2. Official Hand Book of the Jersey City Public School Athletic League

3. Official Hand Book of the New York Public School Athletic League

All these are published by A. G. Spalding & Bros., 126 Nassau Street, New York, at 10 cents each.

II. RECREATION, PLAYGROUNDS AND GAMES

Dr. Luther H. Gulick, formerly director of child hygiene of the Russell Sage Foundation, has written as follows regarding exercise and rest:

What is life for? The object of life is to increase life—to live vitally. No other thing is adequate. Any loss of perspective that puts the earning of money, the securing of professional reputation and that sort of thing first, which does not give to sleep its place, which does not give to out-of-doors its place, is a distortion, and cannot result in the biggest things nor the best work in life.

It is only lack of perspective that permits us to see our work so close that it seems more important to us than life. Life itself is the true object—full, free and social life—and we need to stand back from our work and get this true perspective. Some Sunday, or some week, when you are free from work, ask yourself what is worth while, and then readjust things. Assign to drudgery its place—if it absorbs all the effort, it makes drudgery of life itself. Assign rest and outdoors to their places; assign to your friends their time, and then live the balanced life. In no other way can we permanently accomplish this but by the establishment of community customs.

We have done away with the contagion of talk about ill health. It remains for us to socialize our recreation, to learn to play in groups. Carry on wholesome social exercise—functions out-of-doors, week-end parties, camping trips, boating, folk-dancing—all that is at the foundation of everything which is sane and simple and worth while. This is the answer to the question—the solution of the problem of bridging the gap between knowing how to be healthy and sane, and being healthy and sane. This is the *vita-nuova*, to be reached by socializing out-of-door rest and recreation.

Statutes concerning recreation The laws of this State encourage outdoor life by statutes "concerning playgrounds and recreation placed in this State and providing for the establishment, equipment, maintenance, control, use and regulation thereof," enacted 1907, revised 1911.

In a pamphlet entitled *The Unused Recreational Resources of the Average Community*, published by the Russell Sage Foundation, Clarence A. Perry has shown how recreations of a right sort may be provided in every community for a minimum of expenditure. Under the laws of the State it is possible for public and private means and interests to unite in this movement. After discussing various kinds of recreation, Mr. Perry says:

**Community
recreations**

Another kind of enjoyment, far from being exhausted, which depends almost entirely upon organization, is that of the walking club. A committee of the Chicago Playground Association arranges Saturday afternoon walking trips in the forests, fields, hills, and valleys about the city. Each year it puts out a printed schedule which shows for each trip the time and place to take train, the destination, length of walk, amount of expense, hour of return, and the names of the leaders. The people who are invited to these walks are usually members of well-known groups, such as the local Geographic Society, Architectural Club, Woman's Outdoor Art League, Social Service Club, and a dozen other organizations of similar standing.

In Boston there is a Field and Forest Club which, in addition to its round table classes and open meetings, arranges similar trips to near by points. In England there is a Cooperative Holidays Association which has been in existence since 1887 and now has thirteen centers in Great Britain, Switzerland, and Germany. The Saturday afternoon rambles with which the enterprise began soon developed into annual excursions lasting several days, and the guest houses which were gradually called into existence serve as centers from which the excursions are made.

**Rambles
require
only
arranging**

Every community, nearly, has all of the natural facilities that are needed for rambles, and it only needs a tactful, representative organizer to set in motion the utilization of these superb recreational resources.

One of the most effective ways to bring about a complete realization of a community's assets lies in the tactful stimulation of the persons or bodies which have them in charge. Many park boards and officials still regard themselves as custodians of public property which is to be kept from injury at all costs—even at the cost, to the community, of a greatly restricted use. It is not a strange situation when one remembers of how recent an origin, in this country, the movement is which has set out to teach people how to enjoy life.

**Property
is for use
not for
preservation**

One morning the park superintendent in Hartford, Connecticut, found the boys sliding down the side of a twenty-foot haystack in an out-of-the-way portion of the park. It was wild grass which had been piled up there until it could be used as bedding for the horses belonging to the department. The boys had cut notches in one side of the stack, up which they clambered, and then slid down the other side. They seemed to be having the time of their lives, but they were not improving the trimness of the stack. It is a pretty fair wager that the average park superintendent would immediately have set the police on those boys and banished them from that part of the grounds. But the Hartford man had the play instinct. The stack was left standing throughout the year for the use of the kids and the stable men got their bedding elsewhere.

**A well-used
haystack**

In the parks of Berlin and other German cities the broad walks through the groves are lined with heaps of sand in which large numbers of children play all day long without the necessity of direction or the possibility of injury, while parents and governesses idle on the nearby park benches. Some-

times piles of sand twenty feet high are deposited in open spaces among the trees and here the older boys model cities, forts, moated castles, islands, and other geographical formations.

**A play material
that is as
cheap as dirt**

As means of play sand is, if you will pardon the pun, as cheap as dirt. There are few communities so remote from sand banks or the seashore that an ample supply could not be had at slight expense. Once it is deposited in a suitable location children gather around it like flies and it immediately and automatically begins to yield its vast stores of fun. In spite, however, of these facts there are very few parks in the country which have approached the capacity they might have for giving recreation in this way.

The unrealized resources for recreation still existing in our public schools and some of the ways of making them available have already been pointed out. In some cities the dock department also has bathing facilities which are not fully used but could be if the public demanded them with sufficient insistency.

**Cooperate
in providing
athletics**

Another resource which has only been touched is illustrated by the athletic fields and tennis courts which are provided by employers and several large corporations in Rochester for the enjoyment and benefit of their employees. In one instance the expense of laying out the grounds and providing the equipment has, to some extent, been borne by the employees. Those at Kodak Park have an association which governs all athletic activities; and a baseball league composed of six uniformed teams, and several tennis clubs, are maintained.

Illustrations of the same sort of cooperation between employer and employed can be found in other cities but they are not yet so general that the possibilities of extending recreative opportunities in this way are within sight of exhaustion.

The large and elaborately equipped playgrounds of the cities are multiplying yearly, and the annual or spring and fall festivals are also happily increasing in number. Those planning for these large undertakings are referred to the Playground and Recreation Association of America, 1 Madison Avenue, New York City.

**Wider use of
school yard**

In many school systems the school yard is used not more than half an hour to an hour a day. The children are sent home at noon. They are not allowed to come in the morning until just before school, and they are required to go home as soon as school is out. The thought has been apparently to use the school grounds as little as possible. We are getting a new conception of what is desirable, however, and the whole tendency is toward wider use. The next ten years will doubtless see the use of all suitable school yards quadrupled. This is coming through the rapid extension of the summer playground, through its supervision after school and on Saturdays for the same purpose, and in its continuous use throughout the day for the play of different classes in such cities as Gary, Indiana. Probably the next great extension of its use will be as a playground at night for the adults and the working boys and girls of the community. If the playground is properly lighted, it is possible to make it a delightful place for such games as volley ball, basketball, and even indoor baseball, in the evening. If the school furnishes a



Field Day—Newark Schools



School Yard, Millville



Playground, Leonardo School, Atlantic Highlands

swimming pool, this will give very nearly the same physical facilities that the Young Men's and Young Women's Christian Associations offer.

SCHOOL PLAYGROUNDS

The preparation of the playground surface is important. Surface
The following specifications or directions are endorsed by
the Parks and Playgrounds Association of the City of New York.

For the baseball field a good closely cropped turf is best and is practicable in a clay or loamy soil. If the playground is built of sand, six or eight inches of black dirt must be spread over it in order to make a lawn.

Three or four inches of coarse cinders, well packed and covered with one inch of cinders which have been run through a half-inch screen will make a hard surface over a sandy bottom. If equal parts of screened cinders and good clay are mixed together, dampened, spread one inch thick over a layer of coarse cinders, and well rolled, an ideal playing surface will be made for the athletic field, the running track, or any part of the playground; such a mixture packs well, is springy, does not get dusty in dry weather and can be played on in the rain.

If there is a grass athletic field the baseball runways and other much used parts of the diamond should be made of clay and cinders. About two parts of coarse sand and one part of good clay mixed give somewhat the same effect as screened cinders and clay, and if available can be used to good advantage for running tracks and walks. Coarse cinders rolled and covered with two inches of spent tan bark make a very artistic and appropriate surface for the basket-ball court and little children's playground.

Under the parallel bars, turning poles, seesaw and jumping places, fine, soft sand should be spread about a foot deep. Such a covering requires no care to keep it soft and does not blow away. The giant stride and swings must have very hard surface under them or in a few weeks great holes will be worn in the ground which will be filled with water every time it rains. A strip of cement sidewalk three feet wide under the swings works like a charm. About the best thing for the giant stride is a bed of screened cinders mixed with clay spread eight inches deep and packed solid.

The following specifications are recommended by those in charge of the Chicago Playgrounds:

The problem of a satisfactory surfacing of playgrounds has not yet been solved, but I believe Chicago leads in successful experiments. The surfacing which we use in Chicago, and which we can recommend to others, is torpedo sand, spread over a subsoil of clay or loam which has been raked free of stone, bricks or other rubbish. Torpedo sand is a fine gravel, or sand, from which all of the dust has been taken, leaving nothing but little pebbles approximately one-quarter of an inch in diameter. Torpedo sand may be secured from some river banks, lake or seashore. It may also be secured from inland gravel banks. In the latter case it is usually necessary to pass it through a quarter-inch mesh sieve in order to free it from dirt and dust. Building contractors in any community will be able to supply us with torpedo sand. The cost will be, approximately, \$1.50 per cubic yard. A cubic yard will cover about one hundred square yards of playground surface if properly applied. It should be spread over the playground at a depth of "one stone deep" and then should be sprinkled and rolled frequently. Such a surface will not only lend itself to comfortable use, but will keep down the dust in dry weather and may be played upon soon after a rainstorm.

General Equipment

A great many cities are now putting equipment into their school yards. They are rarely consulting anyone of experience in this matter, and it must be said that the apparatus so purchased is often temporary in character, ugly in appearance, and dangerous in use. It is often set in the wrong places and sometimes costs two or three times as much as it should. Very much of this, although of recent installation, should be taken out at once and replaced by equipment that is safe and suited to the needs of the school. It must be remembered always that free play is more important than the best possible use of play equipment, such as swings, and the open spaces must not be destroyed for any kind of apparatus.

Sand bin. The sand-bin is the mother of the playground movement, and out of it have grown the other developments. From the time he is 1 year old until he is 10 or 12 the sand-bin will furnish any child entertainment and delight. As the sand-bin is for the little children, it should be placed in the most retired part of the yard, where it will be out of the way of the older children. It must have shade, or the sand will get too hot in the summer time. It is well to place it under or around a tree. It should have a molding board or seat around the edge so that the children can mold the sand upon it. This is often used also as a seat when the teacher wishes to tell a story or to give instruction. The sand should be, if possible, the fine white sand of the seaside, as this is pleasant to work with and does not soil the clothes; but any building sand, such as that used in making plaster, will do. The carpenter of the school board can make the bin. The sand will gradually work out upon the playground, where it will often greatly improve the surface. As it is necessary for the sand to be renewed occasionally to keep it in a sanitary condition, this leakage is a good thing in any case. The sand-bin does not require a bottom if the ground is level and hard.

Slide. The slide is one of the most popular pieces of apparatus, and will be used almost continuously by a large number of children. There are apt to be disputes and quarrels over the swing, but the slide offers a natural rotation in office. Sliding represents a universal interest of children, for they have slid down banisters and cellar doors from time immemorial. Almost every place that offers a natural incline in the cities will be found to be used by them.

People generally have the idea that the slide is dangerous on account of its height, but in an experience of thirteen years I have never known of a single serious accident from this cause. Railings at the top prevent the children from falling off there, and after they sit down on the slide they cannot well fall unless they try. If they are not watched they are likely at first to run up the slide, and to slide down standing up.

There is a general feeling also that the slide is very hard on clothes. I doubt if this is so, if the slide is in good condition. The amount of friction and wear of course depends on the smoothness. Even in the schoolroom the child wriggles around constantly in his seat, and the seat or the cushion is not usually very smooth. If a slide is scratched and marked with nails, it is much more destructive to clothes. In the early days these slides were often made of pine. The pine could be made temporarily very smooth and safe, but after a rain the grain was likely to come up, so that the child might be impaled on the splinters as he slid down.

Most of the machine companies now make a steel slide. This is well galvanized, but the galvanizing is apt to wear through where the children place their feet, causing the metal to rust. A rusty slide both soils and wears

the clothes very rapidly. The steel slide is too cold in winter and too hot in summer for much comfort. It is also too expensive to be generally purchased.

W. S. Toothill, of Chicago, makes a maple slide that answers all requirements very well. It does not rust or splinter. It is not too hot nor too cold; it sometimes warps, but never seriously. The 9-foot slide is sold by Marshall Field & Co. for \$7.50; the 15-foot slide for \$25. The slide needs to be waxed occasionally or dressed with raw linseed oil. It is well to have a carpet mat or two to sit on after rain or after oiling, and it is desirable that the apparatus should be made so that the sliding board is detachable, allowing it to be turned over or taken in so as to protect it from the rain.

Giant stride. The giant stride is often put into school yards. It is always enjoyed by children and has some value as exercise. It is a rather expensive piece of apparatus, however, and the steel ladders are somewhat dangerous. For the school yard I prefer the rope and wood ladder with wooden rungs. This is lighter and does not bruise where it strikes. It is also much easier to take in the ropes when that is desired. The giant stride should be placed in the corner of the yard if possible, so that it may be out of the way of the games and so that the children upon the ground may not be struck by those who are flying around upon it.

Horizontal bar. Every school yard should have a horizontal bar. This will serve for tests in shinning, which is one of the standard tests of the Public School Athletic League, and boys everywhere like to climb upon and over such a piece of apparatus. It is a good thing to have three bars, placed at about 5 feet, 3 inches, 6 feet, and 6 feet 6. The earth should be excavated under these bars for 3 or 4 feet on each side and sand filled in. No one would think of exercising on a horizontal bar in a gymnasium without a mat underneath. It is just as dangerous to exercise over hard ground in the yard; a plentiful crop of broken arms is sure to result.

Equipment for Games

Indoor baseball. Every school ground of any size should have at least two indoor baseball diamonds, one for the girls and one for the boys. The regulation diamond is 35 feet square, though the 27-foot diamond is better for small children. This should be laid out permanently, and the places for the bases marked. Bases should be made of sacks filled with sand. The 17-inch ball should be used, and the diamond should be so placed that the ball will not be batted over the fence or against the school building.

Volley ball. Volley ball is the best game for school yards in general, because it takes very little space, and nearly all the children can play. It is the natural corrective of nearly all the bad postures of the schoolroom. The equipment costs very little. From two to four teams should be organized from each of the upper classes, and they might well have volley ball as a period of physical training in the regular school time at least once a week.

Tether ball. Tether ball is another game requiring little space. It is very vigorous and can be played in almost any school yard. Directions for this game and for volley ball can be secured from the Spalding Athletic Library for 10 cents. Both sets of rules are in the same book. The lines around and bisecting the pole are best put in with brick.

Running and jumping pit. Along the fence on one side of the school ground there should be a running track about 10 feet wide. This should be made of cinders or loam and kept in good condition. Most running

is at present arranged for high school and college sprinters, but interest in running itself probably reaches its climax about the tenth or eleventh year, and declines after that. Children in the upper elementary grades are intensely interested in all forms of sprints and relay races. The interest in jumping at this period is also well-nigh universal. There should be a jumping pit filled with sand with regular take-off for the broad jump, and there should be standards for the high jump, which is usually rather more interesting to children.

All the equipment of the school yard should be so made that it can be locked or taken in at such times as it is not to be used.

Construction or Purchase of Equipment

A school playground may be satisfactorily equipped for \$200 if most of the equipment is made and set up by local men. The slide can probably be purchased as cheaply as it can be made. Other pieces of apparatus will cost considerably more from the machine companies.

Playground Games

A few games only are here described. They are taken from various sources. Some may be played indoors. A quite complete list of games, song-games, and dances for children of the various school grades will be found in *Games and Dances*, by William A. Stecker, Director of Physical Education in the public schools of Philadelphia; published by John Joseph McVey, Philadelphia.

There is some danger if games are played too swiftly.

First and Second Grades

Bean bag plays. 1 Pass bags from left to right and return, sitting, and later standing.

2 Pass bags backward on the left side and return, same on right.

3 Pass bags backward over head and return.

4 Tossing (in couples):

Toss with both hands and catch with both.

Toss with right and catch with right.

Toss with left and catch with left.

Take turns tossing into a basket.

Play movements. 1 Warm the hands; rub them together and slap them to rhythm.

2 Warm the feet; stamp in rhythm to music.

3 Warm the body; throw the arms quickly around the chest.

4 Pick apples: raise high on tiptoes, stretch right arm high and bend head backward, pick the apple, and lower the hand; same left.

5 Climb rope: raise right hand high up with head well back, pull the right hand down, and raise the left, and continue.

First Grade

Squirrel and nut. All the pupils but one sit at their desks, each with head on one arm and the other hand outstretched, palm up. The odd player, called the squirrel, carries a nut and runs on tiptoe up and down through the aisles. At his discretion he drops the nut into one of the

waiting hands. The player who gets the nut at once jumps up from his seat and chases the squirrel, who is safe only when he reaches his seat. Should the squirrel be caught before he reaches his seat, he must be squirrel the second time; otherwise the player who received the nut becomes the next squirrel. It is hardly necessary to say that the players wake up to watch the chase.

Squirrel in trees. Some of the players stand in groups of three with hands on each other's shoulders, forming hollow trees. A player stands in each tree, representing a squirrel. There is one odd squirrel without a tree. The teacher or leader claps her hands, when all the squirrels run for another tree, and the odd squirrel tries to secure a tree. The one who is left out becomes the odd squirrel next time.

Good morning. One player comes to the front of the room and blinds his eyes. He may do this by holding his hands over them or by placing his head in the teacher's lap. The teacher then silently points to some other player in the class, who rises at once and says, "good morning, David," or whatever the child's name may be. The little guesser, if he recognizes the voice, responds with "good morning, Arthur," or another name. If he does not recognize the voice at the first greeting it may be repeated twice. Should he fail on the third trial he turns around and changes places with the other player. If he names the right person he retains his place until he fails.

Railroad train. Each player is named for some object on a train, such as engine, baggage-car, dining-car, caboose, etc. One person is chosen to be conductor. He says in narrative form, "We must hurry and make up a train to go to Boston. I will take number 1 engine, some coal, the baggage car, etc." As he names a part the player bearing that name runs to the starter or engineer, who is chosen first, and lines up behind him, each putting his hands on the shoulders of the one in front. When all are on the train the conductor gives the signal for going and the train moves out. At the direction of the starter it goes over some obstacles, under others, around curves, etc. He may have a smash-up at the end. For large numbers there should be several trains started.

Hide the thimble. One player is shown a thimble or other small object and sent from the room. While absent one of those remaining hides the thimble. When the object has been hidden the absent player is recalled and proceeds to hunt for it. While he is doing this the others sing or clap their hands, the song being very soft or low when the hunter is far away from the object and growing louder when he approaches it.

Second Grade

Automobile race. This schoolroom game is a relay race between alternate rows. The front child in each alternate row, at a signal from the teacher, leaves his seat from the right, runs forward around his desk, then to the rear of the row and back on the other aisle, completely encircling his row of seats until his own is reached again. As soon as he is seated the child next behind him encircles the row of seats, starting to the front on the right side and running to the rear on the left side. This continues until the last child has encircled the row and regained his seat. The row wins whose last player is first seated. The remaining alternate rows then play, and lastly the two winning rows may compete for the championship.

Bean bag circle toss. There should be a bean bag for each of the players except two. All the players form a circle separated from each other by 20 inches. At a signal from the teacher each player turns toward his right hand neighbor and tosses his bean bag to him, turning at once to re-

ceive the bag which is coming to him from the left. The game should move rapidly, but of course it requires skill, which may have to be acquired. With beginners it may be advisable to play the game at first with a fewer number of bean bags. Balls may be used instead of bean bags if desired. About every two rounds change the direction of tossing.

Bean bag board toss. A board 18 inches by 3 feet is needed. Near the lower end of it cut a square hole, a little larger than the bean bags. Higher up in the board cut a second hole about three inches in diameter. Give the board a slant of 45 degrees by placing one end against the wall. The player stands at a throwing line 10 to 12 feet from the board. Each player may have five bags, or five may be used for the entire group, the bags being recovered for each player in turn. A bag thrown into the larger hole counts 2, into the smaller hole 5. The player wins who first scores 50. Several boards may be used at once for large numbers.

Overhead bean bag pass. The several rows of pupils compete with one another in passing the bean bag backward over their heads. The players are all seated, with the same number in each row. On each front desk a bean bag is placed. At a signal the first player in each row lifts the bean bag over his head and drops it on the desk behind him, immediately clasping his hands on his own desk. The next player catches the bag and passes it back in the same manner. It is thus passed quickly to the rear of the row. When the last player receives it, he runs forward at once to the front of the line. As soon as he reaches the front desk the entire row of players move backward one seat and the player who ran forward takes the front seat. The play thus continues until the original occupant of the front seat has again regained it. The row wins whose leader first does this.

Fox and squirrel. The players sit in their seats facing the aisles, each two adjacent rows having their feet in the same aisle. Each player thus has someone facing him across the aisle. The game consists in passing some object (the squirrel), such as a bean bag, from one side of the aisle to the other and back again, zig-zagging down the aisle, to be followed at once by some second object (the fox), the effort being to have the fox overtake the squirrel before the end of the line is reached.

Drop the handkerchief. All the players but one stand in a circle, facing toward the center. The odd player runs around outside the circle carrying a handkerchief, which he drops behind one of the players. Those who form the circle must look toward the center and not turn their heads as the runner passes them. As soon as a player discovers that the handkerchief has been dropped behind him he picks it up and chases the one who dropped it, who may run around the outside of the circle and endeavor to reach the vacant place. The players must all run in the same direction. If the one who is chased reaches the vacant place he is safe, and the one who picked up the handkerchief must be "it."

Bird catcher. Two opposite corners of the room are marked off, one to serve as a nest for the birds and another as a cage. A mother bird is chosen, who takes her place in the nest. Two other players take the part of bird catchers and stand midway between the nest and the cage. The remaining players sit in their seats. All of these players should be named for birds, several players taking the name of each bird. The teacher calls the name of a bird, whereupon all the players who bear that name run from their seats toward the nest, the bird catchers trying to catch them. Should a bird be caught by the catchers it is put in the cage, but a bird is safe if it once reaches the nest.

Third Grade

Tag the wall relay. The players should all be seated, an even number in each row. At a signal the last player in each row runs forward and tags the front wall. As soon as the player is out of the aisle the others all move back one seat. The runner, having touched the wall, returns and takes the front seat. As the player sits he raises his right hand as a signal for the player who is now the last one in the row to run forward, the line moving backward one place as soon as he is out of the aisle. He, in turn, having touched the wall takes the vacant front seat. The play continues in this way until everyone in the row has run. Care should be taken to have those seated keep their feet under the desks to prevent tripping. When the player who was number one in the row has run his turn and regained his seat he stands and holds up his hand.

"Simon says." The players sit around a table or at their desks. Each player makes a fist of each hand with the thumbs extended. One is chosen for leader, whom the others follow. The leader says, "Simon says, thumbs up," whereupon he places his own fist on the table before him with the thumbs upward and the other players must all do likewise. The leader then may say, "Simon says thumbs down," whereupon he turns his own hands over so that the tips of his thumbs touch the table. He may then say, "Simon says thumbs wiggle-waggle," whereupon he places his fist on the table with the thumbs up and moves them sideways. If at any time the leader omits the words "Simon says" and goes through the movements the other players must keep their hands still. Any player imitating him under these circumstances must pay a forfeit or become leader, as decided on beforehand.

Weather cock. The players having learned which directions are north, south, east and west, one player, who represents the weather bureau, stands in front of the others, who are also standing, and calls out which way the winds blows. For instance, when he says, "The wind blows north," the other players turn quickly towards the north, etc. Whenever he says, "Whirlwind," the players all spin around quickly three times to the right. For older children half-way points may be used. Forfeits are the penalty of mistakes.

"I say stoop." This game is a variation of "Simon Says," but is more active than the latter. The players stand in a circle or line and in front of them stands the leader or teacher. The teacher says quickly, "I say stoop," and immediately stoops himself and raises again as in a courtesy. The players all imitate the action, but when the leader says, "I say stand," at the same time stooping himself, the players must remain standing. Anyone who makes a mistake is out of the game. The leader should speak and move rapidly.

Pussy wants a corner. All the players but one are stationed in corners or at convenient goals that will serve the same purpose. The odd player goes from one to another, saying to each, "Pussy wants a corner." The player to whom this is addressed replies, "Go to my next door neighbor." All the other players watch their opportunity to change places, and do this as often as possible. Puss tries to secure a corner by rushing to any place that is vacant. Whenever she is successful the odd player becomes Puss. Puss may call "all change," when all the players must exchange places, and in the general flurry Puss should secure a corner.

Line ball. Have an even number of players in each row. Draw a line on the floor across the front of the room, a short distance in front of the blackboard. One player from each row takes his place, toeing the line. Another line is drawn at the front of each aisle even with the edge of the front desks. The game consists in tossing a ball from the leader on the forward line to those players who take their places in turn on the line

at the head of the aisle. The first players in the rows rise to the right from their seats at a given signal and step to the line at the head of their aisle and catch the ball, which should be tossed to them immediately by the leader, who stands opposite. This player quickly tosses the ball back to the leader and sits down. His sitting is a signal for the player next in line to run forward and receive a toss from the leader and return the ball to him. This continues until every player in the line has caught and returned the ball. The line wins which first does this and whose leader first returns to his seat. Either bean bags or balls may be used.

Bean bag toss. Fasten a small box measuring not less than 6 inches square inside one about twice the size, and that in a third, leaving at least 6 inches margin between the boxes. This is set up at a slight incline. Some 10 or 20 feet away from this a throwing line is drawn. Each player is provided with 5 bean bags and takes his place in turn on the throwing line, throwing all five bags at each turn. A bag thrown into the small box scores 15, one into the middle box 10, and one into the outside box 5 points. The player first scoring 100 wins.

Hopping relay race. A starting line is drawn on the ground, behind which the players stand in two or more single files facing the goal. The goal should be 10 or more feet from the starting line and may consist of a wall or a line drawn on the ground. At a signal, the first player in each line hops on one foot to the goal and hops back to the rear end of his line, which has moved forward to fill his place when he hopped out. He touches the first player in the line as he passes him and this player at once hops to the goal and back. Each player thus takes his turn. The line wins whose leading player first regains his place. In a schoolroom the players remain seated until it is their turn to hop. If the game is repeated have them use the other foot.

Follow the leader. One player, who is specially resourceful or skilful, is chosen as leader. The others all form in single file behind him and imitate anything he does. The leader aims to keep the line moving and sets hard tasks for them. He should go over and under obstacles, touch high points by jumping, etc. Anyone failing to perform the task drops out of the game or pays a forfeit, as is decided beforehand.

Bean bag ring throw. The players are divided into groups of equal numbers, which compete against one another. Rings 12 to 18 inches in diameter are drawn on the ground or floor, one ring opposite each group of players lined up in single file. The leader of each row toes a starting line drawn across the floor 10 to 15 feet from the row of circles. Each group has 6 bean bags or other objects for throwing. At a signal the leader of each row throws each of his bags in succession toward the circle and scores 1 point for each bag that lands within the circle. Any bag that touches the line does not count. The player then takes up his bags and runs to the rear of the line, giving the bags as he passes to the first player in the row. The players all throw in turn until the leader comes again to his original place. The row having the highest score wins. Points may be awarded for the team finishing first.

Fourth Grade

Blackboard relay. The class is seated, an even number in each row. The last player in each row has a piece of crayon. Each of these at a given signal runs forward and writes on the front blackboard a word suitable for beginning a sentence. Upon finishing the word he returns to his seat, handing the crayon as he does so to the player next in front of him.

This second player at once runs forward and writes another word bearing a suitable relation to the first one. In this way each player in the row adds to the sentence that his row is writing. The last player must complete the sentence and add punctuation marks. The points scored are: 25 for speed, 25 for spelling, 25 for writing, and 25 for grammatical construction, capitals, and punctuation. This game may be adapted to arithmetic, history, etc.

Corner spy. The players are divided into four groups, which are stationed in four corners of the room. Four captains stand in the center, each with a bean bag, facing his corner of players, who stand in a row. Each captain throws his bean bag to the head player in his row. The bag is thrown back to the captain, who tosses it to the next one, and so on until all the players have tossed. Then the captain calls "Corner spy" and runs to the head of the row, and the last player becomes captain. The group that first has all its players in the captain's place wins.

Bag pile. The players are divided into two or more equal parties, which line up in ranks. Near the front end of each rank is a pile of 10 to 15 bean bags, which are to be passed down the line. At a signal the first player in each rank takes a bag and passes it down the line, sending the others in succession after it as rapidly as possible. The last player in the line upon receiving the bean bag lays it on the floor in front of him, and as each bag reaches him he piles it on the preceding one, thus making a stack. Only the first one may touch the floor. The stack must be able to stand without assistance and the player who stacks the bags must have no help in his task. Should the bags fall over at any time the player must pick them up and pile them over again. The line scores 1 which first succeeds in getting all its bags stacked. The last player, the one who stacked the bags, then carries them up to the front of the line and becomes the first passer for the next round of the game. The line wins which first scores 5 or 10, as has been decided beforehand.

Slap Jack. All the players but one stand in a circle with the odd one in the center. Those in the circle bend their elbows, which should touch their sides, and extend their hands in front with the palms downward. The object of the one in the center is to slap the hands of any player in the circle while thus extended. The circle players may bend the hands downward or sideways, but may not withdraw the arms or change the position of the elbows. Anyone slapped in this way changes places with the one in the center. In the schoolroom this is played in groups with the players seated, instead of in a circle. Two rows face each other to form a group. The one who is "it" walks up and down the aisle.

Observation. This game is a test of visual memory. A number of different objects are placed on the teacher's desk, and the pupils are permitted just one look as they pass by. They then go to their seats and make a list of the things seen. The objects should be so shielded that they can be seen only when one is at the desk. This can be applied to nature study and other work.

Bean bag row toss. Arrange the players in rows of equal numbers. Number one in each row has a bean bag or ball and at the word "start" stands and throws the bag or ball to number two, who also stands at the word "start." Number two throws it back to number one and sits down, while number one throws it to number three, who stands up as soon as number two is seated. Number three throws it back to number one, and the game continues until number one has received the ball back from the last player in the row. He then lays it down on the desk and runs to the seat of the last player, while all players move up toward the front seat. Number two in the row then becomes number one and tosses the ball as his pre-

decessor did. When the first number one reaches his original place he calls "done"—thus scoring a point for his row—and starts again. The row scoring the most points in fifteen minutes wins.

Thimble ring. All players but one stand in a circle, each clasping with his left hand the right wrist of his left-hand neighbor. All right hands are thus free and all left hands occupied. The odd player stands in the center of the circle and tries to detect who holds the thimble, which is passed from hand to hand. Each player in the circle places his right hand first in the hand of the neighbor on the right and then in the hand of the neighbor on the left, with a rhythmic movement, while the entire circle repeats the lines:

"The thimble is going, I don't know where,
It is first over here, and then over there."

When the player in the center thinks he knows who has the thimble, he goes up to him and says: "My lady's lost her thimble, have you it?" If correct, these two players change places. If incorrect, the player who is "it" asks the player addressed to find it. This player has one guess. If he is correct, he takes the place of the one who has the thimble, the one who is "it" taking the vacant place in the circle, and the one who held the thimble going to the center. Should the player be incorrect in his guess he changes places with the one in the center.

Bean bag target toss. Draw three concentric circles on the ground or floor similar to a target. The size should depend somewhat on the skill of the players; for the youngest the inner circle should be not less than 2 feet in diameter and the outer 6 feet. For those more skilled smaller circles may be used. Ten to 30 feet from the outer line of the large circle a throwing line is drawn. When a large number are playing several targets may be used, the players being divided into as many groups as there are targets. Each group has 3 bean bags and each player in turn throws all the bags at the target. Any bag stopping in the inner circle scores 15; in the next circle, 10; and in the outer one, 5. A bag touching the line does not count.

Hound and rabbit. A considerable number of the players stand in groups of three with their hands on each other's shoulders, each group making a small circle which represents a hollow tree. In each tree is stationed a player who takes the part of rabbit. There should be one more rabbit than the number of trees. One player is chosen for hound. The hound chases the odd rabbit, who may take refuge in any tree, always running in and out under the arms of the players forming the tree. But no two rabbits may lodge in the same tree; so as soon as a hunted rabbit enters a tree the rabbit already there must run for another shelter. Whenever the hound catches a rabbit, they change places, the hound becoming a rabbit, and the rabbit the hound. Or the hound may at any time become a rabbit by finding shelter in an empty tree, whereupon the odd rabbit who is left without shelter must take the part of the hound. The trees should be scattered so that both rabbit and hound may have many opportunities to dodge in various directions.

Poison. A circle is marked on the floor or ground, one third as large as one formed by the players clasping hands outside it. Each player tries to push or pull the others into the marked circle, but to keep out of it himself. Anyone who touches the ground within the circle, if with only one foot, is said to be poisoned. As soon as this happens the player or players so poisoned become catchers. The other players cry "poison" and at once break the circle and run for safety, which consists in standing on wood. The merest chip will answer, but growing things are not counted. Any other material may be named as safety. Anyone caught before reaching safety

or in changing places becomes a catcher, and when all have been caught the ring is once more surrounded.

Bull in the ring. All but one of the players stand in a circle with hands firmly clasped. The odd player stands in the center and is the Bull. The Bull tries to break through the ring by parting the hands of any two players. If he breaks through, the two players whose hands he parted immediately give chase to him, and the one catching him becomes the Bull.

Beetle. All the players but one form a circle with the odd player outside. The circle players hold their hands behind their backs ready to receive a knotted towel called the "beetle," which the odd player carries as he runs around the circle to the right. The circle players keep their eyes closed. The one with the "beetle" places it in the hands of one of the circle players, who immediately strikes his right-hand neighbor with it. The neighbor runs around outside the circle to the right and endeavors to regain his old place, the one with the "beetle" striking him as often as he has an opportunity. After the player regains the vacant place the game goes on as before, the player who received the "beetle" giving it to some one else.

Jump the shot. A bean bag or other soft article is tied to the end of a 10-foot rope. The players stand in a circle, with one in the center holding the rope. The center player swings the rope around to describe a large circle on the floor, with a sufficient length of rope to place the bag in line with the feet of those in the circle. The circle players jump to avoid being caught around the ankles by the rope. Anyone caught in this way must retire from the circle, the player winning who longest retains his place.

Catch and pull tug of war. Any number of players may engage in this contest. A line is drawn down the middle of the playing space. The players are divided into two parties and stand one party on either side of the line. The game starts on a signal and consists in catching hold of an opponent by any part of his body, as hand, arm or foot, reaching over the line and so pulling him across the boundary. Any number of players may come to his rescue and try to resist his being pulled over the line, either by pulling him in the opposite direction or by trying to secure a hold on one of the opponents. A player does not belong to the enemy until his entire body has been pulled over the line. He must then join his captors in trying to draw players over the line. The party wins which at the end of the time limit has the largest number of players.

Three deep. The players pair off in couples and all but one couple form a circle with one partner behind his mate. Of the odd couple, one is "it" and the other is chased. The one who is chased may stop in front of any of the other couples; when he does this the rear player becomes the one chased. If the one who is "it" makes a catch, the one caught becomes "it" and tries to return the tag before the catcher can stop in front of a couple.

All Grades

Volley-ball. (From *New Games for the People*, by Henry S. Curtis. in *The Playground*, May, 1913)

This is a game that we have imported from Germany. It is played with a ball a little smaller and about half as heavy as a basket-ball, over a rope or a net $7\frac{1}{2}$ feet high. The court is 25 by 50 feet in size. The server stands with one foot on the back line and bats the ball over the net with the palm of his hand. If it strikes the ground on the other side, it scores one. If it is returned and strikes the ground on the server's side he is out. Twenty one points are a game. There may be any number of players on a side.

This game has great advantage over any other game that we have previously had. In the first place, it is a thoroughly good team game. In Washington, where we introduced basket-ball and volley-ball into the playgrounds at the same time, we found that we could get four or five teams in volley-ball as easily as we could get one team in basket-ball. The skill of the game consists in passing the ball from player to player on your side until you can knock it into an open space on the other side. Sometimes the ball will be passed back and forth over the net 20 times without its ever once touching the floor or ground—something which rarely happens in tennis, which is a similar game without the team combinations.

The net is 7½ feet high, and the ball is often 20 feet in the air. It is the best corrective we have for the round and stooped shoulders and the flat chest, so often engendered in the schoolroom and the office. One has to keep his head up and shoulders back in order to play the game. It would be hard to devise in the gymnasium any better series of movements to straighten out the shoulders and stretch out the chest than the natural movements in playing the game. I believe also there is a certain exhilaration that comes from the mere fact that the head is held high and the glance is directed upward.

Another great advantage that volley-ball has is that it is equally well adapted for play outdoors or in a gymnasium. It is usually played outdoors during the warmer parts of the year and in the gymnasium in the winter, but it is a type of game that may well be played outdoors the year round.

The game is peculiarly adapted to the city because it is more economical of space than any other team game. The court is only half the area of the basket-ball court, and on this space twice as many players may have a good game, so that it requires only one fourth as much space for each player. The ball is soft and light; it does not break windows or hurt passers-by. It can be played in the back yard, on a vacant lot, or in almost any kind of school yard.

Volley-ball is a very inexpensive game. A rope or a net, a couple of slender posts, and a ball, costing altogether \$6 or \$7, are all that are required. This is considerably less than half of the expense for basket-ball.

Perhaps the greatest advantage of volley-ball is its age range. Children will not play basket-ball much before they are 13, and they will discontinue the game in the early 20's. On the other hand, they will begin to play volley-ball at 9 or 10 and may continue to play until they are 70.

Volley-ball can be graduated to the strength by lowering the net or putting in more players. It can be made more strenuous by raising the net, increasing the size of the court, or reducing the number of players. Basket-ball, the only other team game that we have been playing until recently that could be played in a small space, is a violent game having long periods of very intense activity with practically no relief. It is a greater strain upon the heart and lungs than even football. There are many boys and girls who ought not to play basket-ball, while volley-ball is safe for nearly everyone.

Basket-ball has an element of personal character in it and fouls are hard to detect. Disputes and quarrels grow out of basket-ball games very easily. In volley-ball, the players stay on their own side; there is no personal encounter, or "rough-house," to guard against.

Volley-ball is well adapted to the country and is often the only team game that can be played at the country school. In a one-room rural school there will not often be 10 girls or 10 boys old enough to play basket-ball, and there almost certainly will not be 18 boys old enough to play baseball. In volley-ball the girls may play against or with the boys, so as to make up the number, or a very good game may be had with only two or three players on a side. It may be said that it is not best for the girls and boys to play together. Certainly the practice in the city schools and in the public playgrounds is to give the girls a play space that is separate from that of the boys. It is not a good thing for girls and boys to loaf about together, but

there are no moral dangers that result from vigorous play together. There are few things that will do more to establish a healthy relationship between the sexes than such games as this, in which they may be almost equally successful.

Indoor baseball. Indoor baseball was invented on the Hull House playground in 1894. Indoor baseball is not a good name, as the game is played outdoors more than it is indoors. It is sometimes called playground baseball, but this is no better name than the other. The game is like regular baseball except that it is played with a large, soft ball 12 to 17 inches in circumference, on a diamond 35 feet on a side instead of 90 as in regular baseball. The ball must be pitched "under-handed," and there is no stealing of bases.

The advantages of indoor baseball are similar to those of volley-ball. The game requires very little space. It can be played indoors in winter, and outdoors the rest of the year. The ball is soft and does not break windows or injure passers-by. It can be played by girls as well as boys, and they will both continue to play it long after it has become unpleasant to throw a ball across the large diamond, to run so far, or to catch the hard ball. It has not been altogether realized by the American public that we have in indoor baseball an excellent game for people from 30 to 60 years of age, who have a love for the old game, but have begun to find it too strenuous.

Volley-ball and indoor baseball show the way to a system of practical physical and health training without gymnasiums or athletic fields. I suppose the number of teams in these games is doubling every year; but educators are only dimly beginning to realize their significance. There are, however, many schools in which they are being systematically introduced. I found in Houston, Texas, and Kalamazoo, Michigan, three to five indoor baseball teams among the girls in every school, and five to eighteen teams in volley-ball in each school. I happen to know personally about these cities, but there are others where much the same thing has been done.

In Germany three hours a week of physical training is required throughout the common schools, and a large part of the schools have two hours a week of required play, with organized recesses besides. Three hours a week of required exercise is certainly not too much for growing boys and girls. During a considerable portion of the year this exercise may well come from the games of volley-ball and indoor baseball. If there are in a school five classes above the fourth grade, and each class has three periods a week, this would mean fifteen periods altogether, with three game periods each day. This could be easily managed in most school yards. Suppose a class contains forty pupils, approximately half being girls. The class is divided into four teams, two teams of girls and two teams of boys; or the girls and boys may play together on the same team if that is thought best. Almost any school yard will furnish room for two volley-ball or indoor baseball grounds. Of course the play will come out of the regular school time, the same as any other period of physical training. If the children tend to be noisy and disturb the school, the knowledge that noisy play will lose them the privilege will be a sufficient check.

This would seem a revolutionary move to many school authorities, but it is not really so. We have been giving two or three periods a week to gymnastics in our school systems very generally whenever we have had the necessary facilities, and here is something that at the same time is better exercise than gymnastics, is good fun, and is carried on in the open air. In the English preparatory and public schools football and cricket have been compulsory for a long time. About sixty different games have been introduced into the curriculum of the German schools. In the public schools of Gary, Indiana, there is an hour and a half of organized play every day of the week in each of the elementary grades.

On the one hand, these games are offering to the schools excellent physical exercise that is adapted to conditions and that will cost very little—almost

nothing as compared with the cost of building gymnasiums. On the other hand, they are offering a preparation for the future that is quite as real as that of the common-school subjects. Recreation is a part of life, and an increasing part of it. It is no less necessary for the school to prepare for the right use of leisure than for the work to come. The school must see to it that increasing leisure does not mean increasing dissipation.

ATHLETIC BADGE TEST FOR GIRLS

(From *The Playground*, May, 1913, a magazine published by the Association to Promote Play and Public Recreation.)

The Playground and Recreation Association of America has adopted provisionally the following as standards which every girl ought to be able to attain:

First test

All-up Indian club race.....30 seconds
Basket-ball throwing.....2 goals, 2 minutes
Balancing.....24 feet, 2 trials

Second test

All-up Indian club race.....28 seconds
Basket-ball throwing.....3 goals, 2 minutes
Balancing (bean-bag on head).....24 feet, 2 trials

When Indian clubs are not available, the potato race may be substituted.

For first test 140 yards, 42 seconds

For second test 140 yards, 39 seconds

The athletic sports of the girls in the rural communities begin largely in the schools. There are 226,000 one-room rural schools in the United States, and because of lack of gymnasium equipment and dressing-room facilities, events requiring bloomers and bathing suits are not advisable.

In view of the above facts, only two tests have been decided upon. As there are agencies at work to encourage the development of play leaders and the use of various sports in all communities, the third test has been left open for further suggestions.

Rules. There are no height, weight or age limits in the Athletic Badge Test for Girls. The following general rules shall govern the final tests:

There shall be but one trial in each event, except the balancing, in which two trials are allowed.

It is necessary to qualify in all three events in either class in order to win a badge.

No girl is permitted to receive more than one badge in any one year.

All-up Indian club race. Draw 2 tangent circles, each 3 feet in diameter. In one of the circles place 3 one-pound Model BS Indian clubs. At a point 30 feet distant from a line passed through the center of the circles, and parallel to it, draw a line to be used as a starting line.

On the signal the girl runs from the starting line, transfers the three clubs one after the other to the vacant circle, and runs back to the starting line. Three such trips are made, finishing at the starting point. The girl is permitted to use but one hand in transferring the clubs.

To win a Class "A" badge a girl must make the three trips to the circles in 30 seconds.

To win a Class "B" badge a girl must make the three trips to the circles in 28 seconds.

Basket-ball throwing. The regular basket-ball goal may be used. It should be placed 10 feet above the ground and extend 6 inches from the surface to which it is attached. From a point directly under the center of the goal, draw a semi-circle with a radius of 15 feet, for a throwing line.

The girl may start at any point outside of, but touching, the throwing line. On the signal she throws for the goal, runs and picks up the ball, and runs back of the line and makes the next throw. Time will be counted from the signal for the first throw; there will be no signals for the throws following.

To win a Class "A" badge a girl must make two goals in two minutes.

To win a Class "B" badge a girl must make three goals in two minutes.

Balancing. Any standard balance beam may be used, or a 2x4 inch plank, set on the 2 inch side, but the length should be 12 feet.

There is no time limit in this event but there should be an endeavor to meet the requirements promptly, without haste, and with perfect poise.

For Class "A": The girl starts from center of beam, walks forward to end; without turning, walks backward to center; turns and walks forward to other end; turns and walks forward to starting point.

For Class "B": With a bean-bag balanced on her head, the girl starts from center of beam and walks forward to end; turns and walks forward the entire length of the balance beam; without turning, walks backward to starting point.

Potato race. On a direct line draw 4 circles, each 12 inches in diameter and 5 yards apart from center to center. Five yards back of the center of the first circle and at right angles to the direct line, draw a line to be used as the starting line. This is also the finish line. On the first circle place a basket or other receptacle not over 2 feet in height and with an opening not exceeding 3 feet in circumference.

On the signal the girl runs from the starting line, takes one potato from the basket and places it in the first vacant circle (the one nearest the basket); runs back to the basket, passes between it and starting line, takes the second potato from the basket and places it in the second circle; returns to the basket, passes between it and starting line, takes a third potato from the basket, places it in the third circle and runs back to the starting line. From the starting line she runs to the first circle, picks up the potato and replaces it in the basket; passes between the basket and the starting line, runs to the second circle, picks up the potato and replaces it in the basket; runs to the third circle, picks up the potato and replaces it in the basket; runs to the finish line.

If a potato is dropped anywhere but in the circle where it should be placed or in the basket, it must be picked up and properly placed before another is touched.

To win a Class "A" badge a girl must cross the finish line within 42 seconds from the time the signal to start is given.

To win a Class "B" badge a girl must cross the finish line within 39 seconds from the time the signal to start is given.

ATHLETIC BADGE TEST FOR BOYS

(From *The Playground*, April, 1913.)

The Playground and Recreation Association of America has adopted the following as standards which every boy ought to be able to attain:

First test

Pull up (chinning).....	4 times
Standing broad jump.....	5 ft. 9 in.
60 yards dash.....	8 3-5 seconds

Second test

Pull up (chinning).....	6 times
Standing broad jump.....	6 ft. 6 in.
60 yards dash.....	8 seconds
or 100 yards dash.....	14 seconds

Third test

Pull up (chinning).....	9 times
Running high jump.....	4 ft. 4 in.
220 yards run.....	28 seconds

As these standards have been tested in the public schools of several cities it has been found that boys of 12 years of age should be able to qualify for the badge under the first test, elementary school boys of 13 years and over for the second test, and high school boys for the third test. It does not seem, however, to those who have had experience with this form of athletics, that the different standards should be limited to these age groups. Accordingly no age or even weight limit is fixed. Any boy may enter any test at any time.

Similar tests are now in use in many cities and in some country districts. The Association has attempted through a committee of experts from different parts of the country to establish standards which would be simple, consist of events which are interesting, and be generally acceptable. The tests require only simple apparatus and a comparatively small space. They can be conducted in a short period of time even with a considerable number of boys, and the measure of each boy's performance can be accurately determined.

Rules. The following general rules shall govern the final competition:

No boy is permitted to receive more than one badge in any one year.

It is necessary to qualify in all three events in any one class in order to win a badge.

There shall be but one trial in chinning, one in the dashes, and three in the jumps.

Pull up (chinning). A portable chinning bar in a doorway, a horizontal bar in the gymnasium or the rungs of a ladder set at an angle against a building may serve the purpose.

Each contestant begins with his hands on the bar. Then with his arms straightened at full length he pulls himself up without a kick, snap, jerk, or swing, until his chin is above the bar. Lowering himself again until his arms are straight, he repeats the "pull up."

Standing broad jump. Whenever possible it is best to prepare a jumping pit by digging up a piece of ground about 4 by 25 feet and have a wooden or metal strip 2 inches wide imbedded in the ground at one end of the pit flush with the surface, to serve as a "take-off." It is also well to mark off 5 feet 9 inches and 6 feet 6 inches from the "take-off." Each competitor is allowed three jumps, his best jump being taken as his record.

The feet of the competitor may be placed in any position, but shall leave the ground once only in making an attempt to jump. When the feet are lifted from the ground twice, or two springs are made in making the attempts, it shall count as a trial jump without result. A competitor may rock back and forward, lifting heels and toes alternately from the ground, but may not lift either foot clear of the ground, nor slide either foot along the ground in any direction.

60 Yards dash, 100 yards dash and 200 yards run. A stop-watch is necessary in this event. Under the direction of a starter each competitor takes his position on the starting mark. The starter gives the signal by saying: "on the mark," "get set," "go." At the word "go" the time keeper starts his watch. As the runner crosses the finish line (60 yards, 100

yards, or 220 yards from the starting line) the time-keeper stops his watch. The time indicated on the stop-watch is the runner's time.

A false start is one where any part of the person of a competitor touches the ground in front of his mark before the starter purposely gives his signal. The third false start shall disqualify the offender. The competitor shall keep his hands behind the mark assigned to him.

Running high jump. The bar shall be a thin stick and shall rest on pins which shall project not more than 3 inches from the uprights. When this bar is removed, it shall constitute a trial jump without result.

The height shall be measured from the middle of the bar to the ground on a direct line.

Each boy shall be allowed 3 trial jumps at each height.

Running under the bar in making an attempt to jump shall be counted as a balk and 3 successive balks shall constitute a trial jump.

Order of events. The following order of events is suggested: pull-up (chinning), jumping, running.

Badges. The Association recommends that each boy passing the tests be allowed to pay for his own badge just as a young man or woman at college elected to Phi Beta Kappa pays for the key awarded. The price, post-paid, either singly or in quantity, is 15 cents each.

Public schools, private schools, playgrounds, evening recreation centers, settlements, church organizations, and other organizations of good standing in any city, town, village, or rural community may use the tests adopted by the Association, and *certify*, on blanks furnished by the Association, the names and addresses of boys passing the tests, ordering the number of badges of each kind required.

The American Committee on Athletic Standards for Boys will pass on each list certified. If such a list is accepted by the Committee, the badges ordered will be forwarded on receipt of the money. The Association will reserve the right to test boys whose names have been sent in if in the judgment of the Committee it seems desirable to do so. The Association will expect those certifying these lists to exercise the greatest possible care. The object in passing on each list is so far as possible to make sure that badges shall go only to such boys as have passed the tests required.

For further information regarding the badges and the giving of the tests, apply to Playground and Recreation Association of America.

What the badge test does. Every boy ought to be physically efficient. Specialized athletics have developed remarkable American athletes but they have done most for those who needed athletic training least. Every boy ought to try to reach a certain minimum physical standard. Such standards have been formulated by a committee of experts and are here presented.

Every boy passing the tests is authorized to wear this badge, which stands for physical efficiency.

Whenever two boys wearing this badge meet each other, they know that they have had the same tests, and they feel a certain comradeship, even though their homes be on opposite sides of the continent.

In these days the boy who makes himself physically efficient is preparing himself for efficient citizenship later.

It is hoped that once each year in each city there can be a meeting of the boys who have qualified in previous years to welcome those who have just qualified. It would not be unfitting in our American cities, as in the cities of ancient Greece, for the leaders in the city's life to make such a time a notable annual event.

In some cities the physical standard of the boys has been made much higher because of these tests—sometimes 30 per cent higher. To achieve the same result nationally would enable America to continue to have in these days of city life the pride in the physical fitness of her boys which she formerly had in the pioneer days.

GYMNASIUM

In some of the newer school buildings, not only in those for high schools but also in those for grammar schools, a gymnasium has been provided. Indoor gymnastics and exercise should never take the place of outdoor activity, but it is a valuable supplement. Whenever possible, the gymnasium, large enough for basket-ball, and equipped with such apparatus as is necessary for varied indoor physical training, should be planned for.

Swimming pool. A most valuable adjunct to the gymnasium is the swimming pool. Swimming is one of the most exhilarating of exercises for girls as well as boys. It is also much to be desired that every boy and girl learn to swim, since boating, outdoor bathing, and skating are such common recreations. It is believed that teaching girls and boys to swim is a legitimate part of the work of the public schools. This instruction is already given in Hoboken, Jersey City, and Bayonne, and the prediction is freely made that it will become more common. The swimming pools should not only be used by the pupils of the schools, but they should also be available to the public Saturdays, evenings, and vacation periods.

In one of the Jersey City schools the swimming pool is 14 by 36 feet, with a series of shower baths at each end. The pool and the baths can be isolated from the rest of the building and used at any time, day or evening, for children or adults. Swimming lessons are given after school hours while school is in session; during summer vacations the classes are continued all day. A pupil upon learning to swim receives a certificate of proficiency. From six to ten lessons are necessary.

III. POSTURE

The following discussion has been prepared especially for this monograph by Jessie H. Bancroft, author of *Posture in Home and School*.

Correct carriage of the body is a fundamental element in health and efficiency. Full breathing capacity is impossible with a collapsed chest; digestion, circulation, and other great organic functions may be seriously impeded by faulty attitudes; while habits of posture of the feet are responsible for much suffering through weakened and broken arches. Obviously, both physical and

Swimming Pool at School No. 32, Jersey City



mental efficiency and well-being are closely associated with this phase of development.

The correct standing position is one in which the various segments of the body—head, chest, abdomen, and legs—are poised, one above the other, in a balanced position, so that a maximum of strain is borne by the bony framework, and the least possible strain thrown upon muscles and ligaments. Once made habitual, it is the easiest position to maintain, and may be held for the longest time without fatigue. It is the position of the long-distance walker, the mountain climber, the best all-round athletes; it is the position of command and authority, and is found predominant in the great leaders of commerce and public life. On the other hand, collapsed positions are characteristic of both physical and mental weakness. They constitute a distinct aspect of weakness and illness, from the tuberculosis patient to the feeble-minded; and though good health and strong brains are sometimes found with poor posture, the latter is so characteristic of weakness, and its ultimate effects so well established, it is safe to say that these exceptional cases succeed in spite of a severe handicap.

Correct posture may be recognized by observing the long axes of the different parts of the body, as to whether or not they form a straight line or a series of zigzag lines. That is, the long axis of the trunk of the body should be vertical; the weight should so be poised that a line dropped from in front of the ear would fall within the forward half of the foot. The shoulder blades should be flat on the back, and the feet directed straight forward, not outward.

Sitting positions may be judged in the same way. A perfectly erect attitude should show the axes of trunk, neck and head in a continuous, vertical line. This same relation of parts should be maintained for reclining backward against the back of the seat in a resting position, or in leaning forward to write or study, though in this forward position, under our present school conditions, the head is usually bent forward. The chest, however, should be kept broad and open, in all leaning forward for desk work, and above all, the action should be from the hip joints and never from the waist.

Every child should know how to stand correctly, and it is as much a teacher's business to teach him this, as to see that he can add and read. The old-fashioned "nagging" is not teaching. It does not make a child understand what is meant by standing correctly, nor does it train his power to assume and hold the position. Those ends have to be the objects of carefully devised methods, patient help and guidance, and systematic training. Throughout the years of growth, bodily proportions change so rapidly that only in a small minority of cases will habit and power for correct posture come without such assistance. This phase of development must be, in other words, one of the distinct objects of education.

Efficiency methods for school use for training posture have been worked out on a large scale with great success, and have been found to substitute for nagging, a motive on the part of pupils and an interest and zeal on the part of both teachers and pupils that have invested the whole subject with enthusiasm and produced marked results.

Briefly stated, these efficiency methods consist of:

1. A standardized, or triple test for posture, by which each class is judged once a month.

This test consists in judging each pupil in a standing position. The teacher should have the entire class stand, and look over one row at a time in profile, having those pupils sit who are not in correct position.

Those who remain standing should then be required to march around the room for three or four minutes, any who lose good posture while marching being required to sit.

Those who remain standing after the march, should then be put through the third, or last part of the triple test, which consists of two or three exercises, usually with the arms, which indicate whether or not the child

has enough muscular power and coordination to exercise without reacting with bad posture. The effects of corrective exercises (which are designed to strengthen the muscles in which weakness is the cause of poor posture) depend upon this ability to hold a good position throughout exercise.

2. Having selected the pupils who can pass the triple test, the class should be grouped on this basis for every lesson in physical training. All pupils who pass the test should form division I, and stand in one or more rows on one side of the room; the remainder form division II, and stand in parallel rows on the opposite side. The change of position to these groups can be made in from seven to ten seconds at the beginning of each physical training lesson.

3. On the basis of this division of the class a percentage should be figured showing the class standard in posture. For example, if out of a class of forty pupils only ten pass the triple test, the class standard on this subject is 25 per cent. This should be posted on the blackboard, and the pride of pupils roused to increase the class percentage. Individual ambition to be promoted to division I should also be fostered. These psychological appeals have a powerful effect and should be constantly used for that purpose.

4. Both divisions should take their physical training lesson at the same time, but the grouping, besides its appeal to the pupil's pride, enables the teacher to concentrate attention on the pupils most needing her help.

In this grouping, the first requisite is to put each pupil into the correct position; next, to train him to assume it without help; and finally, to see that he holds it throughout the corrective exercise.

To put a pupil in correct position it is usually necessary to assist him personally. If the trunk sags backward in the fatigue position, the teacher should push it into position by means of one hand placed over the shoulders in the back, the opposite hand being placed just below the waist in front, to give a point of resistance.

The shoulder blades will need separate correction if they lie obliquely on the sides of the chest, instead of flat on the back. In the wrong position they protrude behind in what are called "wing shoulder blades," which may be plainly felt through the clothing; and the arms are then carried too far forward, so that their weight drags the chest downward. To correct the shoulder blades the teacher should stand behind the pupil, place the fingers over the round of the shoulders, and draw the shoulder blades backward.

The erect neck and straight feet can usually be assumed on direction.

Having put a child in position, the teacher should have him lose and take it again, if possible without help, several times in succession, until he has acquired the *feeling* of what is right. The teacher should realize that she is training discrimination in the muscular sense, and power of muscular coordination.

Various auxiliary aids will be found helpful with these efficiency methods, such as awards of banners or buttons; or honorable mention, assembly reviews, trophies for the greatest class gain in a given time, etc., etc. None of these, however, can supplant the efficiency methods themselves, which accomplish results without such aid.

Several features of school life are notoriously bad for posture. The shape and ill-adjustment of most school furniture are potent causes of rounded shoulders and spines, and collapsed chests. The carrying of heavy loads of school books is a most harmful influence. Proper light, and other influences affecting vision, are directly related to posture. Many more general influences are reflected in and affected by the carriage of the body, such, for instance, as nutrition, sleep, nervous fatigue, worry, over-work and other influences that are physically and mentally depressing. Much harm is wrought by improperly shaped clothing, for both boys and girls, men and women. In all these matters, the teacher may exert a strong influence.

There should be a clear understanding of the effects of different types of exercise. Formal, corrective gymnastics form the only type of exercise cor-

rective of posture, and this usually loses its corrective values in proportion as it becomes rhythmic. All recreative exercise, such as games, folk dances and athletics, is admirable for very distinct and important values of its own, but it does not correct posture. A balanced health training will include all of these elements.

NOTE. In the schools of Newark all pupils are regularly tested and rated on "posture" as they are on arithmetic, reading, etc.

APPENDIX D

CARE OF TEETH, EYES AND EARS

While the responsibility for the discovery in schools of physical defects is primarily placed in this State on the medical inspector, nevertheless the teacher should understand the nature of the common defects in these organs, the bearing of these defects on the general health of a child, and the common remedies—at least those remedies or aids that are under the control of the teacher.

Attention is here called to a few of these matters.

TEETH

The influence of the mouth conditions upon the general health is established. Teachers cannot remedy mouth defects, but they can do much by their intelligent, sympathetic advice and influence.

The following extracts are taken from *Health and Medical Inspection of School Children* by Dr. Cornell, Director of Medical Inspection, Philadelphia.

Dental decay or caries, notwithstanding its frequency, is an unnatural event and one caused largely by improper habits existing in civilized life.

Effects of decayed teeth

The effects of dental decay are (1) lowering of the general health, (2) increased liability to infectious diseases, (3) improper occlusion (meeting) of the teeth with resulting deformities and irregularities of the teeth.

Lowering of the general health is caused (1) by the imperfect mastication of food, with resulting malnutrition and indigestion, and (2) by the swallowing of germ-laden food with putrid material from unfilled cavities, causing indigestion and poisoning of the system.

The child should be taught that decayed teeth, chronic gum abscesses, and lost teeth will, after a time, produce certain definite conditions which will lower his adult value.

The infectious diseases favored by decayed teeth include tonsilitis, diphtheria, pneumonia and tuberculosis.

Proper care of the teeth includes cleanliness and alkalinity of the mouth. For this reason a vigorous scrubbing with chalk or magnesia tooth powders answers every purpose.

Care of teeth

The proper method of brushing the teeth is *up and down* rather than across them, as by this procedure the spaces are thoroughly searched. During this operation the handle of the brush should be held horizontally while brushing the outer surfaces and vertically while brushing the inner surfaces.

The teeth should be brushed at least morning and night. Of these the night is the more important.

The school dental clinic is referred to on pages 53 and 55.

A book published recently by J. B. Lippincott Company, entitled *Mouth Hygiene and Mouth Sepsis*, written by Captain John Sayre Marshall, formerly Examining and Dental Surgeon, U. S. Army, is intended to meet the needs of the dental profession, of students of dentistry and medicine, trained nurses, school teachers, sanitarians, and the general public.

NOTE. The New Jersey State Dental Society will furnish lectures without charge to instruct teachers, school nurses, pupils and mothers' clubs in hygiene of the mouth and teeth. Application may be made to the *New Jersey Dental Journal*, Newark, N. J. This offer should be taken advantage of freely.

EYES

Quoting from Dr. Cornell's book:

Affections of the eye, so far as they fall in the practical province of medical inspection, may be classified under (1) affections of the eyelids, conjunctive mucous membrane, and cornea, and (2) eye-strain.

It is important that the teacher recognize the signs of eye troubles that may be caused by eye-strain, as these troubles may be often easily remedied by glasses or at least alleviated by a change of seat or by other schoolroom adjustment.

Headache, swollen, crusted or reddened eyelids, inflamed eyeballs and sties are always *suggestive* of eye-strain.

Tense facial expression, "squinting," and wrinkling of the forehead, twitching or blinking of the eyelids may be caused by eye-strain.

Eye examinations should be made if possible by the medical inspector, but a teacher can often apply simple tests for long and short sight. These should be merely preliminary to tests by a competent specialist and should never be used as a basis for prescriptions for glasses or for special treatment.

Snellen test sheet

The Snellen Test Sheet, enclosed in this pamphlet, may be used to great advantage as follows:

1. Hang the sheet in some place in a room where
 - a. the pupil to be tested can stand or sit 20 feet from it;
 - b. the light illuminates it, but does not shine directly into the face of the child;
 - c. The light is neither direct sunlight, nor a dim light. North light, near a window, on a bright day, is best. If a person with *normal* sight can see the letters marked 20 feet, the light is doubtless good light for the test;
 - d. it is on a level with the eye of the pupil being tested;
 - e. it hangs *flat*, without creases against a blank wall. It may be well to paste or fasten the sheet securely to a piece of stiff cardboard or a piece of board.
2. If a child wears glasses, test with the glasses on. It will thus be determined whether or not the glasses fit.
3. Do not allow the card to hang where other pupils may study it. They may unconsciously commit it to memory.
4. If there is suspicion that a pupil has learned the sequence of letters, have him read from right to left or skip about.
5. Hold a stiff card against the nose, half an inch to an inch in front of one of the eyes of the pupil. Be sure that both eyes are open, the covered eye as well as the one being tested, being careful to prevent the covered eye from seeing without pressing it.
6. If the uncovered eye can read easily the letters in the line indicated by 20 feet, that eye is not near-sighted. If it can read all but two or three

70 ft.

D L N

50 ft.

P T E R

40 ft.

F Z B D E

30 ft.

O F L C T G

20 ft.

A P E O R F D Z

15 ft.

N P R T V Z B D F H K O

letters it should be rated as passing the test. If the uncovered eye can read the line indicated by 15 feet, it is far-sighted. If it cannot read the line indicated by 20 feet, that eye is near-sighted and should be tested by the lines above, indicated 30 feet, 40 feet, and so on, until one line can be read, to determine approximately how serious the near-sight defect is.

Dr. Louis F. Rapeer in *School Health Administration* makes the following recommendation: "Only those whose vision in either eye is 20/40 (i. e. reads the line marked 40 feet at 20 feet distance) or less should be counted defective, unless there are signs of eye-strain. In other words, no one is expected to have perfect eyesight."

If a child persistently holds his book too close to his face, the teacher may take the book and, telling the child to read, gradually withdraw the book till the child can no longer read the print. The distance to which the book may be with-

Other simple tests

drawn will depend on the size of the type and, to a less extent, on the age of the child, but the teacher can form a fair idea of what is reasonable. If the child is unable to read the book at a proper distance, there is some defect of vision which should be referred to the medical inspector. If the child can read at a proper distance, he should be required to do so, lest the strain of close reading eventually produce near-sight.

On the other hand, eye-strain may often, though not always, be detected by holding the book at a distance from the face and as the child reads, gradually approaching it to the face till it blurs. Any child of grammar school age ought to be able to read for a moment four inches from the nose. Inability to do so shows some degree of far-sightedness, though it may not require correction. Ability so to read does not positively exclude eye-strain; nevertheless the test is a valuable one.

If a child complains of inability to see blackboard, maps, etc. from his seat, the teacher, by placing herself in his seat or close beside him, may readily discover the reason. Assuming the teacher's own vision to be normal (and every teacher should know about this) if she can plainly see the object, the difficulty must be in the child; but if the distance is too great, the light poor, etc., this will be apparent, and the proper remedy may be applied. Pupils should be seated where they can see to the best advantage.

Even though neither eye prove to be very near or far-sighted, there may be astigmatism or other serious trouble not revealed by these tests, and an examination by a specialist should be made if the signs of eye-strain continue.

Examination by specialist

EARS

Dr. Cornell makes the statement:

Defective hearing is the physical defect constituting the greatest bar to progress in school. The importance of early treatment in cases of defective hearing cannot be overestimated, because of the obstinate nature of old cases, the retardation of the deaf child's mentality, and the liability to flat chest and stoop-shoulders from the habitual leaning forward to hear.

The following are also extracts from Dr. Cornell's *Health and Medical Inspection of School Children*:

Evidences of defective hearing

The observant teacher will often suspect deafness if the child is a mouth-breather, is slow in executing commands, and is apparently stupid. The latter is often conscious of no symptom whatever. It is well to note that timid children will frequently conceal their infirmity. There is a surprising ignorance in children (and parents too) of their condition, and no one has ever recorded that a small child of his own initiative complained of inability to hear. For this reason cases of defective hearing must be revealed by a sympathetic examination.

Tests for defective hearing

An examiner standing behind a child while testing his vision can quite fairly estimate his hearing by whispering questions as to the child's school age or address, first standing to one side and then to the other. Children who fail to hear the questions should be farther examined.

Another test is to stand a child 20 feet from the teacher, with one ear toward the teacher. The teacher asks a series of simple questions in a whisper loud enough to be heard distinctly by a person with normal hearing. If the questions are not heard at 20 feet, the distance may be shortened to determine the amount of defect. Each ear should be tested in this way separately.

An excellent test is to require the child to repeat after the teacher a series of numbers pronounced distinctly but with varying loudness. The lips of the teacher should not be visible to the child, for these children often pick up lip-reading instinctively with surprising readiness. In this or in any other test the normal children of the class may be used as controls.

Children may also be tested with a watch, a stop-watch preferred; but this test is somewhat more difficult to apply.

Dr. Rapeer states regarding the test for hearing: "As with vision, the individuality of children is such that the best standard is common sense, *conservative* common sense, in this matter."

Importance of nasal obstruction and nasal catarrh as the most common causes of deafness should be emphasized.

APPENDIX E

DANGERS AND SAFEGUARDS

I. DANGERS AT HOME AND AT SCHOOL

Illuminating gases. Illuminating gas escapes through leaky pipes, defective gas fixtures, and carelessness in turning off.

Illuminating gas kills in a short time. Coal stoves generate gas similar to illuminating gas, which may cause asphyxiation when the drafts are not properly adjusted.

Sewer gas causes sickness. Headaches are often attributable to it.

Do not neglect the odors of escaping gas.

Do not carry lighted matches, lamps or candles where gas is escaping.

Use of gasoline. Gasoline is often used for cleaning gloves and clothes. The vapors form very rapidly when the liquid is exposed to the air and these vapors are very inflammable. Many persons annually lose their lives by using gasoline near a flame.

Do not use gasoline.

Poisons. The careless labelling and storing of medicines sometimes leads to deaths. All poisons for the killing of flies and mice, and those used for disinfecting or medicinal purposes should be *conspicuously* labelled and kept where children cannot get them and where adults will not take them by mistake.

Decomposing matter. Putrefaction generates gases that are often dangerous. Milk easily absorbs these gases and thus becomes unfit for food, often poisonous for babies and young children.

Decaying material is the natural breeding place for flies and vermin, which carry the disease germs to the food of unsuspecting people.

No material that is likely to decay should remain uncovered in the house, the yard, the alley, or the street. Children should not throw such material about, and especially should avoid eating cast away food or fruit as the decay is likely to have produced poisons.

Broken glass and rusty nails. These are very dangerous, as they accumulate poisonous germs, which are likely to cause blood-poisoning or lockjaw when introduced into the system through cuts or bruises.

Wash and dress the wound as directed under "Emergencies" and consult a physician.

Do not neglect cuts made by broken glass and rusty nails.

Fire. (See following section.)

II. DANGERS FROM FIRE

The fire loss in this country and in Canada, due to ignorance and carelessness, was last year, 1912, over \$196,000,000.

Mr. C. Albert Gasser, Inspector of Combustibles and Fire Risks in the City of Newark, writes, "Many lives are lost annually in New Jersey because people do not understand the dangers of explosives and fires."

A "Fire Prevention Code" has been adopted by the city government of Newark, parts of which are so fundamentally and universally important for the safety of the community and of the individuals in the community that they are given here.

Sec. 5. No person shall kindle or maintain any bonfire or other fire, or shall knowingly furnish the materials for any such fire, or authorize any such fire to be kindled or maintained, on or in any street, avenue, road, lane or public ground, or upon any private lot within the limits of the city of Newark, unless a permit shall first have been secured from the inspector of combustibles and fire risks.

Sec. 6. No garbage, waste, or refuse material of any kind on any vacant property within the limits of the city of Newark shall be burned nor shall any fire be permitted on any such dumping ground.

Sec. 7. No person shall deposit ashes on any wooden floor or in any wooden receptacle standing on any wooden floor, or against any wooden fence or building or any building within the limits of the city of Newark.

Sec. 8. No person or persons shall use or take into any building, barn, vessel, boat or any other place where gunpowder or any other explosive material, or hay, straw, or other highly combustible material may be kept, any burning light or open flames unless the same shall be well secured in a glass globe, wire mesh cage or similar device.

Sec. 12. (i) No gasoline shall be conveyed from one place to another in any open can, vessel, or container. No gasoline shall be put into or taken out of any automobile within thirty feet in direct line of any fire, lamp or open flame. Nor shall any gasoline be put into or taken out of any automobile between the hours of sunset or sunrise of the following day, unless all lights used for illuminating purposes shall have been first extinguished.

Sec. 17. No person shall at any time place encumbrance of any kind whatsoever before or upon any fire escape, balcony, or ladder intended as a means of escape from fire.

Sec. 33. No person or persons shall set off or discharge any revolver, pistol, gun, cannon or firearms of any description using cartridges or gunpowder for ammunition, providing always that nothing contained herein shall be construed to extend to any military maneuvers, to any target practice or to the explosion of dynamite or similar material used for blasting purposes under proper supervision.

Sec. 34. No person or persons shall fire, discharge or set off any firecrackers or other thing containing powder or other explosive or combustible material, or fireworks of any description, except on the anniversary of the Independence of the United States of America, or the day celebrated as such, nor shall any person or persons, on this day, fire, discharge or set off any firecrackers, or fireworks of any description the sale and storage of which may be prohibited by the inspector of combustibles and fire risks.

Sec. 39. No gun, revolver, pistol, cannon or firearm of any description shall be sold or given to any one under the age of fifteen (15) years. No gun, revolver, pistol, cannon or firearm of any description shall be sold unless a record of the name and address of the person to whom such weapon is sold shall be kept in a separate book by such selling agent, together with a record of the manufacturer's number or other marks by which such weapon may be identified.

The following notices also are worthy of study and observance.

NEWARK FIRE DEPARTMENT

BUREAU OF COMBUSTIBLES AND FIRE RISKS

N O T I C E !

The City Ordinances prohibit bonfires in any street or on any private or public property. The penalty is \$25 fine. This law applies to everybody.

In former years many little children have been burned to death at these fires.

Do not build any bonfires yourself. If you see any bonfires please notify a police officer. You may save some child's life in doing so.

NEWARK FIRE DEPARTMENT

BUREAU OF COMBUSTIBLES AND FIRE RISKS

N O T I C E !

It is not lawful to keep Benzine, Gasoline or Naphtha in a dwelling house. Cleaning clothes with such material in any house where people live is forbidden, and is punishable by a fine of \$25 for each offense.

It is necessary to have a permit to keep, or use, or sell Benzine, Gasoline or Naphtha. If you need these articles in your business, go to Fire Headquarters and ask for the Inspector of Combustibles and Fire Risks.

Mr. John Conway, Chief of the Jersey City Fire Department, furnishes the following valuable warnings and suggestions. With a change in name of city or town and in address of Fire Headquarters, the suggestions apply everywhere.

HOW TO SOUND ALARM OF FIRE

Keys are in Fire Box with glass front. To sound alarm break glass, turn key, open door, pull hook on inside *clear down once only*, and let go. Stand by the box until the Department arrives and direct them to the fire.

HOW TO SOUND ALARM BY TELEPHONE

Call—69 Jersey City—Fire Headquarters. Tell the exact location of fire, with nearest cross street. Speak low and distinctly. Don't get excited. Remain at the telephone until sure the Department has the message.

PRECAUTIONS TO AVOID FIRE

Keep cellars and attics free from combustible matter. Do not let electric wires or globes come in contact with curtains or draperies. Persons using electricity should have a cut-off switch where the lines enter the building,

and turn off current when leaving the building. See that your gas pipes do not leak. Do not enter the cellar with a lighted lamp unless sure gas pipes are in good condition and not leaking. Keep oily rags in tin covered vessels. Put all ashes in metal, never in wood. Do not fill gasoline stoves or lamps when lighted. Keep chimney flues free from soot.

NEVER

1. Never put your trust in a fireproof building; remember that the contents are not fireproof.

2. Never insure your property for more than its value.

3. Never permit a stove to be set up without a metal protection being placed on the floor under the stove.

4. Never permit a stovepipe to come in contact with a partition. See to it that there is an open space around it.

5. Never allow swinging lamps or gas brackets near a window.

6. Never use paper shades or paper or cotton decorations on your lamps.

7. Never use cotton or other flimsy material for decorations either in store windows or on Christmas trees.

8. Never allow children to light candles on Christmas trees.

9. Never throw hot ashes in a wooden barrel or in alleys or on the street, nor permit them to be piled up against buildings or fences.

10. Never start a bonfire near a building.

11. Never permit a child to start a bonfire or go near it.

12. Never permit rubbish, greasy rags, paper, and useless waste to accumulate in and around buildings.

13. Never put kindling-wood in the oven.

14. Never hang clothing near the stove or stovepipe.

15. Never smoke in bed.

16. Never throw a lighted cigar, cigarette or ashes from your pipe in a place where it might start a fire.

17. Never light a match unless you want to start a fire for something that is needed.

18. Never leave matches around where children can reach them.

19. Never light a match in a closet or attic where clothes are hung; the head of the match may fly off and set the clothing on fire.

20. Never use any kind of a match except a safety match.

21. Never permit gasoline, benzine, or naphtha to be kept in the house.

22. Never permit gasoline, benzine, or naphtha to be kept in anything but an air-tight metal can painted red.

23. Never allow anyone to wash clothes or other articles in gasoline, benzine, or naphtha in the house.

24. Never throw gasoline, benzine, or naphtha into a sink, cesspool or sewer.

25. Never start a fire with kerosene oil, benzine, or naphtha.

26. Never fill a lamp or gasoline stove when it is lighted.

27. Never throw water on flames which start from kerosene oil, as it tends to spread the blaze. Smother the flames with a rug, quilt or heavy clothing.

28. Never clean beds with highly inflammable liquids.

29. Never polish a stove while there is any fire in it.

30. Never leave a lamp burning when you leave the house.

31. Never leave a lamp with the light turned down; it is liable to cause an explosion.

32. Never celebrate the Fourth of July by shooting toy pistols, firecrackers, Roman candles, skyrockets, and other dangerous explosives.

ALWAYS

1. Always study to prevent fires in house or place of business.

2. Always give attention to fire prevention; an ounce of prevention is worth a pound of cure.

3. Always remember that to have fire prevention in your home is better than to mourn over the remains of your beloved ones, or to have the sympathy of your neighbors over your loss.

4. Always remember that a house of merriment is better than a house of mourning.

5. Always be prepared to put fires out before they become dangerous.

6. Always be prepared in case of fire to save every person in your building; plan before the fire occurs.

7. Always know where the nearest fire alarm box is situated and keep the call number of your fire department in plain sight near the telephone.

8. Always call the Fire Department as soon as the fire is discovered.

9. Always see that fire drills are held at least once a week in every school or factory.

10. Always keep your supply of matches in metal boxes throughout the house.

11. Always remember that the flames of the match, improperly, carelessly, thoughtlessly, or wantonly applied, result in the destruction of property and in death.

12. Always extinguish a lighted match before you throw it away.

13. Always insist on having an outside shut-off attached to your gas supply pipe so that gas may be turned off from the street.

14. Always avoid rubber hose connections for your gas stoves.

15. Always see that all kerosene oil is kept in a closed metal can in a safe place.

16. Always see that all lamps are filled by daylight, burners kept clean and wicks changed often.

17. Always have your chimneys, stovepipe and stoves examined and cleaned once a year to avoid any danger of fire.

18. Always see that your stove or range is in good condition and that no spark or live coal can fall on the floor.

19. Always see that all ashes are placed in a metal, tightly-closed receptacle.

20. Always keep your buildings clean and free from rubbish, etc.

21. Always have a full pail of water on each floor in the house to put out a starting fire.

22. Always insist on fire-resisting material to cover the roofs of your buildings. A shingle roof is the best kind of a fire catcher.

23. Always keep fire escapes in good condition, well painted and clear of all obstructions.

24. Always have your steam boilers examined twice a year.

25. Always have a stationary iron ladder leading to the roof of your building permanently in place, instead of a movable wooden ladder.

CONCLUSION

Always remember that all fires are the same size at the start.

The following "Fire-Don'ts," compiled by George D. Porter, Director of Public Safety, of Philadelphia, for Boy Scouts, are important for all to obey, young and old.

Don't go into closets looking for clothing with a lighted match.

Don't kindle fires in stoves with kerosene.

Don't put hot ashes and coal in wooden barrels or boxes.

Don't thaw out frozen water pipes with a torch or lamp.

Don't allow waste paper, excelsior, and rubbish to collect.

Don't use benzine or gasoline for cleaning in a closed room.

Don't look for gas leaks with a match or lamp.

Don't allow lace curtains near gas brackets.

Don't allow sawdust to be used in cuspidors or on floors.

Don't allow oily rags anywhere.

Don't throw waste paper in a fireplace.

Don't throw cigarettes or cigars away if lighted.

Don't keep matches in paper boxes or lying about carelessly.

Don't use snapping parlor matches; taboo them.

Don't forget that matches are the beginning of many conflagrations.

Don't hang your clothing near open fires or stoves.

Don't fill lamps after dark, and never when lighted.

Don't allow rubbish anywhere; keep clean.

Don't burn leaves and dead grass on windy days.

Don't forget to have the chimneys of your home cleaned once a year.

Don't fail to look twice at everything that looks like fire.

Don't leave everything to the landlord; inspect your own building.

Don't fail to notify the Chief of the Fire Department of anything you may see that is dangerous and liable to cause fire; remember that every day is fire prevention day.

Don't fail to give firemen every opportunity to make a careful examination of your property; they are trying to help you.

SCHOOL FIRE DRILLS

Fire dangers in the school can be practically eliminated even in non-fire-proof buildings, by instructions to children which will control their conduct in case of panic, and by proper fire drill.

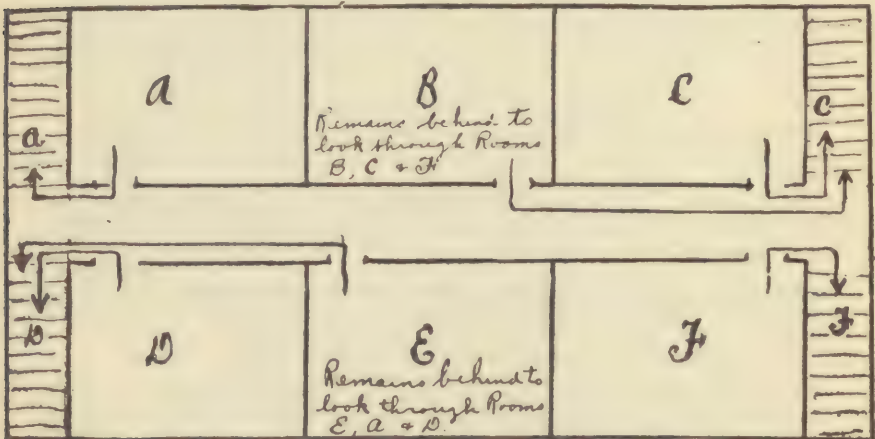
The following Rules for Fire Drills have been furnished by Dr. James G. Koshland, Director of Physical Training, Camden.

1. No line must leave a school building without a teacher at the front. The great danger is from panic and stampede and not from the fire.

2. Every room must be scrutinized to insure that no one is left in the building.

3. One well-planned route for a fire drill is better than a multiplicity of routes and signals which are confusing.

The following plan will show how one drill will answer for any building. This drill shows roughly the second floor of a new Camden twelve-room building and will suffice to show the principle of a fire drill that may be adapted to any building by holding to the cardinal three rules as stated above.



Teachers A, D, C, and F leave their rooms ahead of their pupils and lead them downstairs. Teachers D and C therefore head a double line. Teachers B and E remain and look through rooms as indicated to make sure no one remains. Should there be an obstruction—of fire, or anything else—on the stairs or down below them, the teacher in advance halts her line or lines, “about” faces them and marches them back to the other end of the building with the assistance of the teacher who has remained behind, and thus down the other exit. Teachers may be trained to meet emergencies of this kind by the use of a signal (a flag held by the principal) at some unexpected part of the building, a stairway or hall being thus blocked off, whereupon the teacher and class so obstructed are trained to about face and use the next most available exit.

Every exit of a school should be utilized if possible in a fire drill so there will be congestion at no exit.

Fire extinguishers and apparatus should be overhauled and tested at the beginning of each school term by the janitor.

III. DANGERS ON THE STREET

HON. CALVIN N. KENDALL

Commissioner of Education, State of New Jersey
Trenton, N. J.

Dear Sir:

The Public Service Corporation of New Jersey is pleased to cooperate with you in the matter of educating children to give the subject of personal safety the due consideration which it has never received, and believes that the method you have outlined of teaching the teachers, and through them the children, is the correct one.

Respectfully yours

A. J. VAN BRUNT

Director Safety Education

SAFETY FIRST

PUBLIC SERVICE CORPORATION OF NEW JERSEY

Because of the rapidity of living incident to modern methods, and of the “speeding up” of all manufacturing and transporting machinery, the yearly “accident” death rate and total number of cripples, made so by “accidents,” has assumed alarming proportions.

The realization by governments, by educators, and by managers of factories and transportation corporations, of this fact, and that it is an unnecessary condition, has resulted in an almost universal effort to educate adults as well as children to consider personal safety.

The Legislature of our State recognizing the condition, and the existence of such educational movements in other parts of the United States and in foreign countries, has wisely made it obligatory to give instruction in all of the schools on this subject.

In order to instruct others, we must first recognize the value of the lesson to be taught. If the teacher will, by reading the accident statistics and recommendations furnished by railroad companies, and the daily papers, and by facts gleaned from personal observation, endeavor to form an idea of the appalling and unnecessary waste of life, limb and property taking place

every hour, he will be better fitted to point out to the children the absolute necessity of thinking "Safety First."

Realizing the necessity for such cautionary instruction, it is possible to impress the "Safety First" thought on the child's mind. This has been proved by the results obtained from the single course of lectures delivered in the schools of New Jersey by representatives of the Public Service Corporation of New Jersey.

What we are in the habit of calling "accidents" cannot occur except through lack of thought; the child intent on its play, the adult intent on other matters, is the victim of an "accident." The mother who gives no thought to the danger, permits the child to play with a bonfire or matches; permits the child to make the highway a playground notwithstanding the fact that there are vacant lots, yards, and in many municipalities, regularly maintained children's playgrounds. The automobile operator, the horse driver, the motorman and the locomotive engineer are too often blamed for injuries sustained by children when the blame properly rests upon the parent, guardian, or teacher, who failed to point out the dangers. It is possible by setting a good example, and by repeated words of caution, to succeed in training the child to think "Safety First," and to realize that the chances taken because of lack of thought, even though they may not result in personal injury or death, are out of all proportion to the pleasure gained or the time saved.

Caution should not be confounded with fear, and the exercise of caution, the habit of consideration of "Safety First," need in no manner interfere with work or recreation. There is no rational thing which we desire to do that cannot be done in a manner consistent with the thought of "Safety First."

The instructor cannot be given exact phraseology to use in teaching "Safety First." Local conditions relative to cars, wagons, railroads and other dangers must govern, and the prevailing methods of children's play differ greatly in various localities.

All play, all work, and all travel can be made much safer by the constant "Safety First" thought; and the constant mental question should be: Is the pleasure, the gain, or the time saved commensurate with the risk about to be taken?

The child does not derive sufficient pleasure while playing in the midst of traffic-laden streets to compensate it for the enormous risk it takes.

The adult hurrying to keep an appointment, or to meet an obligation, primarily does wrong in not having started sooner and as a result his mind instead of being alive to the constant dangers incident to travel is totally oblivious to any thought of "Safety First," and almost the entire burden of the personal safety of the pedestrian is placed upon the engineer, the motorman, the chauffeur, or the horse driver.

The actual application by the instructor of the following matter must, of course, be governed by the age and mental capacity of the children taught, but it has been demonstrated that no school child is too young to understand, and no adult too old to be in need of the instruction. The constant repetition and memorizing of a few phrases which will tersely express thoughtfulness is recommended.

The instructor must, of course, be permitted to use personal judgment in presenting the various "danger things." Stories based on local examples of results of accidents, participants in which frequently can be found in the school, and always amongst the acquaintances of the children, expressed in terms adapted to the age of the child, will readily occur to the instructor whose interest has been sufficiently aroused. For example, in order to fix in the minds of the children the word "Safety," experience has proved the desirability of using the letters composing the word as standing for things which will appeal to little ones, as for instance:

NEW JERSEY SAFETY LEAGUE



Composed of those who think
"SAFETY FIRST"
for themselves and others

Lazy and Thoughtless of "Safety First"



In danger from slip of wheels and other cars; from wagons and automobiles

Cars must run on tracks and cannot turn out or stop quickly



Let car go past first. That is "Safety First"

- S Steam and street cars
- A Automobiles
- F Fire
- E Electricity
- T Teams and Think
- Y You! the person who must think of "Safety First"

and the following outline stories are suggested as an example of ones that have been told to the smaller children, and in different phraseology to even the higher grades, to impress the word "Safety" upon their minds.

"Once there was a man who sat before a fire; there was a kettle on the fire and it was singing; steam was coming out of its nose and the lid was bobbing. He watched it a long time and then a fairy whispered in his ear—or maybe it was the song the kettle was singing—this: 'There's a Giant in that kettle; catch him and build a strong harness around him and he will pull your ships across the ocean without sails, and pull your trains across the land.' And they caught the Steam Giant and built an iron harness—a machine we call an engine—and he pulls ships across the sea and trains across the land. His name is Steam. He does great things, goes fast and does many good things; but sometimes he does cruel things. If you get too near Steam it will burn you—scald you; and if you walk on the railroad track, sometimes he can't stop and runs over you.

"Another Giant, the Auto Giant, came up out of the ground. They dug a deep hole in the ground and instead of water a black, shiny, oily thing came up that didn't have a good smell. We call it Oil, but it is really a Giant that was asleep in the ground for thousands of years. They cleaned this giant and now we call it Gasoline, and this giant out of the ground makes the motorcycle go; he makes the automobile run; and he makes the flying machine sail through the air.

"There is another Giant, the Fire Giant. He does good things for us, but he hurts boys and girls, too, if they forget to think 'Safety First.' This giant comes out of the end of a match sometimes, and he often burns down great forests and cities, your school and your home.

"The Electric Giant is the greatest of them all. A man named Benjamin Franklin went out to fly a kite one day; he was a big man—not a boy flying his kite—a man. He sent his kite away up into a black cloud where the lightning flashed, and he got a message back from the Giant there—down the kite string. The Giant tried to hide in a lot of places, but they found him up in mountains, in the waterfall, in coal and the trees—and they harness him with wires and set him to work. They make him do a lot of things. He lights up your house; he makes the streets and stores almost like day. Over the telephone wire he carries your voice hundreds of miles. He carries messages under the ocean, and he pulls our big heavy street cars. When you go out of school today, just look up and you will see the harness of the Electric Giant in every direction. On poles it is strung—big wires and little wires, trolley wires and cables; but remember, keep away from his harness. Touch one of his wires and he knocks you down dead or burns you badly.

"All of these four Giants—Steam, Auto, Fire and Electric—are good Giants and do more good than harm.

"*'Think!'* How many girls and boys here can think? Of course, you can think or you wouldn't be in school.

"And last of all is this little letter 'Y'—the smallest of them all, but it stands for the biggest part of *safety*: it stands for the boy and girl who can think of safety. And it stands for the person who is most to blame when you are hurt."

By this method it is possible to impress upon the minds of the younger

children the word safety, in connection with those things which are "danger things."

Historical facts relative to the invention, perfection, and use of the various things which the letters composing the word represent should be commented on in connection with such stories as may be applicable. Such forces as steam, automobiles and fire can be designated as great powers or giants that have been partially subdued and are now employed by humanity for its business and pleasure, but because of their only partial subjection require constant vigilance in their management and proximity to prevent their enormous destructive forces doing injury.

Good results have been obtained by appealing to the larger children to constantly safeguard the smaller, not only during, but after school hours.

The effect of a constant example of care, mental balance, thought, and absence of hurry, set by larger children and especially by teachers, cannot be overestimated.

The illustrations accompanying this article must of necessity show very few of the kinds of accidents that occur hourly, but they can be used to awaken the children's interest in the subject.

Don't play ball, tag, cattie, or any game in the street where cars, automobiles, and wagons must run.

Do play in the yard, in the playground, or in a vacant lot.

A child must and should play. The fact that many hundreds of children are hurt yearly while at play on the streets in New Jersey should be used as an argument to impress upon the children the fact that it is wrong to play upon the streets. Point out that the automobiles, the motorcycles, wagons, and cars must run on the street and the railroad train on its own track; that they do not run on the sidewalks, or playgrounds, or vacant lots. That at times all of those things run faster than necessary, but at the same time it is essential that these things carry people and goods to their destinations as quickly as is consistent with safety; that they are large and heavy and cannot stop as quickly as a boy or girl. That the human being that approaches too close to them is sure to be hurt, perhaps crippled for life, or killed. Depict the sorrow and loss resulting.

Don't run across the street in front of or just behind a car, a wagon, a motorcycle, or an automobile.

Do cross the street slowly, after looking both ways, and let the "danger things" go past first.

The time gained by risking the danger incurred in hurrying in front of a moving vehicle is infinitesimal and by the average person is frequently immediately wasted, so that it is actually time lost. Much better to have devoted it to the proper consideration of the "Safety First" thought.

Because of their size, weight, and rapidity of motion it is not possible for vehicles to come to a stop as quickly as the pedestrian can, and pedestrians may well be taught that they have "brakes" in their feet which will operate instantly, if the feet are placed beside each other and kept still.

Don't steal a ride on a car, or wagon, or automobile.

Do watch out for the cars, the wagon and automobile coming the other way.

The amount of pleasure derived on a necessarily short, stolen ride does not pay for the risk involved. It is as if one voluntarily paid \$5 for a five-cent ride, and the number of fatalities occurring because of the inability of the child, when jumping off of a vehicle upon which it has been stealing a ride, to see an approaching vehicle, is very great.

Don't get on or off a car while it is moving.

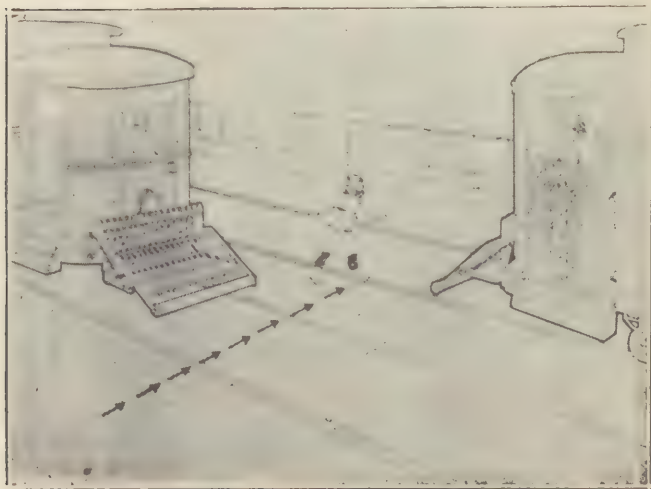
Do wait until it completely stops before getting on or off, and face toward the front of the car when you get off.

**Not enough fun to pay for the risk
Teach the children to play safely**



Play, but think of "Safety First"

Think "Safety First" for the little children



Keep them off of the streets

"The right hand is the right hand for the bundle"



Face front when leaving

Nothing is gained by boarding a moving vehicle. It will come to a stop before it can carry you on your journey. No time has been saved and a risk has been run.

The largest number of accidents that occur on the streets of our cities are those caused by persons leaving moving cars and facing backwards when leaving. "The right hand is the right hand for the bundle." Men, women and children with their right hands employed in holding such things as they may be carrying must of necessity grasp the hand rail with their left hand, and face front. When facing front the liability to accident from tripping, sudden starting of the car, high heeled shoes, tight fitting skirts, and high steps is reduced to a minimum.

Don't carry matches loose in your pocket or allow small children to have matches or fireworks.

Don't hurry up a fire with oil.

Don't build or play with, or near, bonfires.

Do keep matches in a safe place out of reach of children in a metal or china receptacle.

The various kinds of safety matches, igniting only on a prepared surface, are best. Applied common sense would eliminate the numerous accidents resulting in severe, at times fatal, burns to children.

The bonfire is attractive, but it is a "danger thing," and the numerous bonfires seen daily are a sad commentary on the lack of thought on the part of the parent, the guardian, or even the passerby, and show unperformed duty on the part of the police.

Don't point a gun or pistol at any person, even in play.

Do remember that guns and pistols are sometimes loaded when we think they are not.

Many of those who suffer or die from gun or pistol wounds are victims of the "Didn't know it was loaded" firearm. The only safe rule is "Don't do it!"

Don't walk on a railroad or trolley track or right of way.

This "Don't" is perfectly and completely covered in an article by Mr. R. H. Newbern, Superintendent Pennsylvania Railroad Company, but it is a fact that thousands of men and women set a bad example daily and "take a chance" by crossing or walking on railroad rights-of-way without considering that the time and distance saved does not compensate for the risk taken.

Do start soon enough so as not to be in a hurry.

Americans were criticised justly when it was said of them: "You are a wonderful people, are continually devising some method of saving time, and are almost as continually devising some method to employ the time you have saved."

The absence of mental poise and the nervous condition which accompanies hurry, preclude the possibility of thorough mental or physical work or recreation; and the person who starts the day five or ten minutes late would accomplish more if he would immediately conclude that those minutes were lost, and not endeavor to make them up by hurrying.

Do remember electricity runs through wires; it is very strong, burns severely or kills quickly.

Do keep others away from a fallen wire and send for the proper man to fix it.

Even men who are trained in the safe and proper handling of electric wires, because of familiarity, which results in carelessness, often neglect some precaution and are burned or electrocuted.

The only safe plan to pursue when a wire is noticed lying on the ground or hanging from a pole or building is to presume that it is a "live wire"

carrying electricity, a real "danger thing." Remain in the vicinity, prevent others from touching the wire, refrain from touching it yourself, and send for a lineman or electrician to "clear up the trouble."

Don't look for a gas leak with a match, candle, lamp or any kind of flame light.

Don't hang clothing or hats upon gas fixtures.

Do send for the gas man as soon as the odor of escaping gas is noticed.

Do have immediate repairs made to defective gas fixtures.

Don't light gas water heater or gas oven jets without first leaving heater or oven door open several minutes.

Be sure that gas is turned off completely and that safety stop prevents thumb key turning all the way around.

An object lesson is most effective and lasting; and an excess of dignity, or a feeling that it is "none of my business" should not prevent an adult from acting to further the "Safety First" teaching.

On the street it is the duty and should be the pleasure of all men and women to do those things which will tend to impress upon the mind of the child the "Safety First" lesson. Put out the bonfire; reason with the children who are playing in danger places. Don't scold; don't assume the superior attitude. Children are amenable to reason, and none but the unthinking person will accuse you of interference when you stop dangerous play, whether it be a bonfire, running games in the streets, stealing rides, or other "danger things" that may come to your notice.

"Don't take a chance."

"The right hand is the right hand for bundles."

"Start early. Don't hurry."

"Wait until the car stops."

"Fire is a good servant but a terrible master."

"The 'unloaded' gun frequently kills."

"Trolley and railroad tracks are the giants' sidewalks. You have your own."

"A wire is a danger thing; let it alone."

"Gas brackets are not clothes hooks."

"Wait for the fire to kindle, or re-build it. Don't hurry it with oil."

"Stolen rides often cost too much."

"Play in safe places only."

"Let cars, automobiles, motorcycles, and wagons go past first."

"Work, play, travel; but always think

"S A F E T Y F I R S T"

..

IV. DANGERS ON RAILROADS

"This problem of safety is not altogether a question of rules and their enforcement, safety appliances and their application, but the development of inherent self-restraint and control.—*W. W. Atterbury*, Vice-president Pennsylvania Railroad Company.

The Pennsylvania Railroad Company makes the following recommendations:



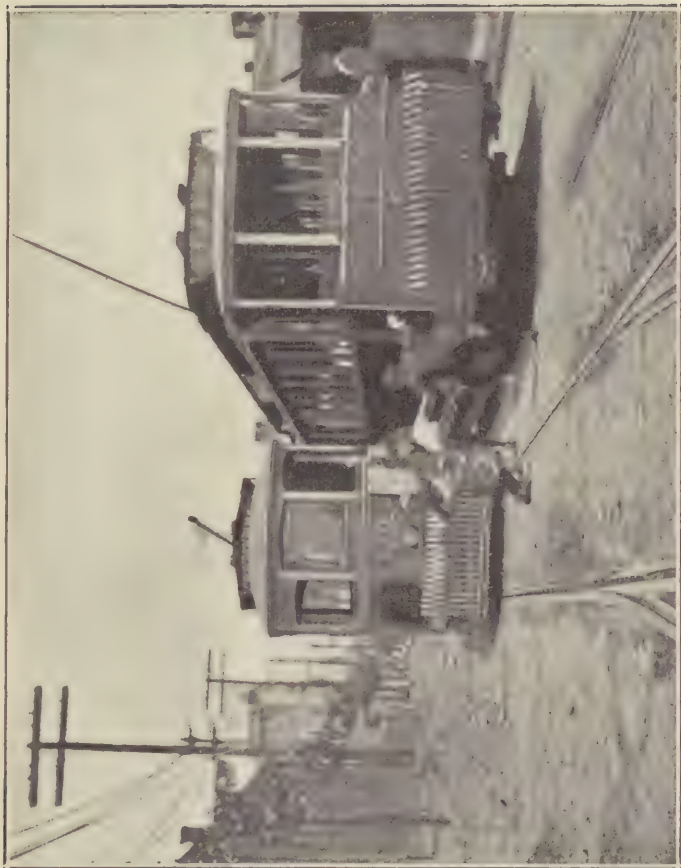
Don't hurry. Let the auto go past

"Safety First" Play in places that are safe



Cars, wagons, automobiles do not run on all streets. Never on sidewalks

Thoughtless, foolish play Not in a safe place



Play, but think of "Safety First"

May 22, 1913

MR. C. N. KENDALL
 Commissioner of Education
 State of New Jersey

Dear Sir:

Acknowledging your letter of the 7th inst. relative to instruction for school children along safety lines and inviting the cooperation of the Pennsylvania Railroad Company in formulating suggestions, I beg to advise that we shall be very glad to render every assistance possible to insure success in this work, as it has been our feeling that the safety problems must be solved largely by elementary instruction beginning with the child, that the value of such work would not be limited to the children, but through the interest created would reach the parents and others.

There are three common dangers or practices involved in railroad operation which are more or less applicable to children of school age and which I believe should be repeatedly emphasized to forcibly impress them on the child's mind.

First, with reference to trespassing on the railroads. In some localities it is more or less the practice of children to use the railroad in going to and from school, notwithstanding that in many places walking on the railroad is forbidden by law and that many children have been killed or maimed for life as a result of the practice. On the Pennsylvania Railroad alone, during the years of 1907 to 1912 inclusive, the records show that 316 of the trespassers killed were boys, girls, students, and women, as classified in the accompanying statement. It will be noted that a considerable reduction is shown in the number of these accidents due to the active campaign which the Pennsylvania Railroad has inaugurated to prevent trespassing. The reports of the Interstate Commerce Commission for 1912 show that 5,434 persons were killed trespassing and 5,687 injured.

The danger of trespassing is not confined to the actual walking on the tracks or between the tracks but in walking on the paths and embankments which parallel the tracks, which are also railroad property. Many railroads in the more populous districts employ watchmen to patrol the tracks and right-of-way, who are instructed to arrest all persons using railroad property as a public highway; and children should be carefully instructed to avoid this practice.

Crossing railroad tracks. Children should cross railroad tracks only at public roadway crossings, after looking carefully in both directions, always observing the precaution to "Stop, Look and Listen." At crossings where watchmen are stationed, children should obey the watchman's signal and not attempt to cross unless the way is clear. When crossing gates are down across sidewalk or roadway, children should be warned against the practice of crawling underneath, which is sometimes done, as there is always danger from passing trains until the gates are raised and the crossing unobstructed.

Boarding and alighting from trains. In leaving trains children should not go outside on the car platform in attempts to alight before the train has come to a full stop. The practice of attempting to overtake a train leaving a station, in getting aboard after the train has started, is responsible for many injuries, and always involves great danger. Children should be particularly cautioned against attempts to board a train after it has started.

It is my opinion that discussion of "Safety First" or some phase of the subject would be an excellent topic for school essays, such as the dangers of trespassing on railroad property, walking on tracks, playing in the yards, and jumping on moving trains. There are, of course, many other headings under which "Safety First" as applied to railroads could be discussed but I think those which I have stated are the most important, as instructions and

training in the principles of safety will provide a remedy for most of the other accidents.

We shall be glad to furnish any additional data or information which you may consider desirable, in order that the instruction along safety lines may be effective.

Yours very truly

R. H. NEWBERN

Superintendent

Following is a copy of a circular issued by the Chicago and North Western Railway Company.

TRESPASSING ON RAILROADS

TO STATE, COUNTY, CITY AND VILLAGE SCHOOL AUTHORITIES

Gentlemen:

Your attention is called to the following statistics showing the number of trespassers killed and injured on the railroads of this country during the last twenty years, which are taken from a paper read by Interstate Commerce Commissioner McChord at the First Cooperative Safety Congress held at Milwaukee in October, 1912:

86,733 trespassers were killed

94,646 trespassers were injured

181,379 trespassers killed and injured on the railroads of this country

According to the reports made of such cases to this Company and the New York Central Lines, these cases should be divided as follows:

25,000 young people under 18 years of age, residing in the vicinity of accident, many of them under 10 years of age.

36,276 tramps and hoboes.

120,103 citizens of the locality in which the accident occurred, mostly wage-earners.

When you stop to think that in twenty years there were

TWENTY-FIVE THOUSAND

young people killed and injured on our railroads—enough to make a milepost for every mile of travel in a trip around the world, and that in nearly every city, town and village there is some child without an arm or a leg lost trespassing on the railroad, or a little grave in the cemetery of some child (perhaps an only child) killed flipping on the cars; and that during the last few years of the twenty-year period referred to FOURTEEN trespassers were killed and FOURTEEN injured each day of the 365 days in the year; and that four fifths of the killed and injured, or

ONE HUNDRED FORTY-FIVE THOUSAND, ONE HUNDRED AND THREE

were not tramps but young people and children and respectable citizens, mostly wage-earners of the vicinity in which the accidents occurred; FOURTEEN times as many trespassers killed every day and every year as there are passengers killed, BECAUSE WE ARE THE ONLY CIVILIZED COUNTRY IN THE WORLD THAT EITHER HAS NO LAWS PENALIZING TRESPASSING ON RAILROAD TRACKS, OR WHERE WE HAVE SUCH LAWS, WE NEGLECT TO ENFORCE THEM; and while all kinds of laws have been enacted and enforced to secure the safety and pro-

Neither wagon driver nor boys thinking "Safety First"



Cars cannot always stop quickly

Wires are the harness of the "Electric Giant"



Don't touch them. Think 'Safety First'

tection of passengers, none have been enacted and enforced to prevent trespassing, although the lives and limbs of the

ONE HUNDRED FORTY-FIVE THOUSAND, ONE HUNDRED AND THREE

trespassers (which number is exclusive of the tramps) are just as valuable to their families and to the State as are the lives and the limbs of the passengers—you will, I think, agree with me that something should be done immediately to stop this unnecessary waste of life and limb.

It would actually cost the State and municipalities less to enforce a trespass law than it does to pick up and bury the dead and care for the cripples, to say nothing of the saving of human lives and limbs, the most valuable possession we have in the world, and at the same time protect the children—perhaps our own children, who may be among the number of those killed and injured if nothing is done to stop the trespassing.

Believing the school, public and private, is the place to commence to teach that trespassing must be stopped, your attention is called to the matter in the hope that if you agree with me, the proper instruction will be given to the pupils in your school, and that they be especially warned of the danger of

Walking on railroad tracks or bridges
Loitering about railroad stations or cars
Flipping on and off trains, cars or engines
Crawling under, between, or over cars
Crossing tracks without looking and listening to see whether
a train is coming
Crawling under gates when they are down

The cases reported are actual cases taken from the records of this and other Companies.

Yours truly

RALPH C. RICHARDS

Chairman Central Safety Committee

The following is the Great Northern Railway's "Message to the People":

HELP US PREVENT ACCIDENTS

DO NOT WALK ON RAILROAD TRACKS!

..

Hunters and many other people occasionally try a "short cut" by walking on the railway tracks.

Make this *your* rule: *Don't do it.*

There is always danger of a train coming from behind while your attention is distracted. The results may be serious—perhaps fatal.

Our train crews will do their best to look out for you, even if you are careless, but they have many duties and cannot always guard against *your* carelessness.

The *right* way—the *safe* way—to use railway tracks is to *ride in a train.*

Don't run needless risks.

USE CARE IN APPROACHING RAILWAY CROSSINGS

Automobile drivers who *gaze* at the *scenery* instead of keeping their *eyes* on the road at critical points are inviting *disaster.*

Our crossing signs are designed to prevent accidents.

Will *you* help? Will you take to heart the *lessons* of this picture?

Timely cooperation will save injury, will help us in protecting our men and our patrons, and *you*. "An ounce of prevention" is the *only cure* for accidents.

TIMELY WARNING!

Mothers may prevent many accidents by pointing out to their children the *dangers of carelessness* at railroad crossings.

Our engineers are human—they do their best to avoid accidents. Most of them have children at home. They are *ever watchful* to save the little folks.

But *you* can do much to help them in their work by properly instructing your boys and girls.

Tell them not to venture out on a railroad crossing without looking carefully both ways.

THE "THIRD RAIL"

Electric power is replacing steam on the so-called "steam roads." The overhead wire and the "third rail" are both used to transmit this power. In sections of the State where the "third rail" has been introduced, attention of pupils in all grades should be called to it. In the upper grades one or more pupils might make a special study of this means of power transmission and describe it to the school, with drawings. Railroad officials will be glad to assist by giving information to teachers or pupils and it may be possible in some cases to secure a talk to the school from one of them.

By taking the following precautions, many of the deaths and injuries occurring on and about railroads can be easily prevented:

1. Don't attempt to cross a track in front of a moving train; wait until it passes.
2. Don't attempt to cross a track without first stopping and listening, and looking in both directions to see if a train is approaching.
3. Don't step off one track on to another to let a train pass; step clear off ALL tracks.
4. Don't stand upon or near tracks to carry on a conversation or kill time. It is extremely dangerous, especially at stations and crossings and in yards.
5. Don't use the tracks as a pathway; there is unlimited space outside of the rails and off the railroad company's right of way where you are free from danger.
6. Don't permit dumb brutes to be on crossings or tracks if you can prevent it. It is both dangerous and cruel. Drive them off.
7. Don't permit children to play or go upon the tracks for any purpose.
8. Don't get on or off trains while in motion.
9. Don't stand up in trains or unnecessarily pass from one part of the train to another while in motion.
10. Don't get on trains on which you do not intend to become a passenger and remain thereon until after the train has started. Say good-bye to your friends before getting on the train.
11. Don't allow boys to indulge in the dangerous practice of "hopping" on and off moving cars and trains.
12. Don't steal rides on trains.
13. Don't stand or walk on track until train is almost upon you before

getting off; have a due respect for the engineer's feelings and promptly observe the warnings he sounds for your protection.

14. Don't stand on platforms or in open doorways of moving coaches, and don't place hand on posts or jamb or open door; the movement of train may swing the door shut and mash your hand.

15. Don't place suitcases, satchels, or other heavy packages in racks in coaches, as they are liable to fall out and injure those sitting underneath.

16. Don't throw banana peels, orange peels, or other fruit remnants on floor of station or car, out of car windows at stations, or in other places where they are liable to be stepped upon.

DON'T BE RECKLESS OR FOOLHARDY—YOU WILL EVENTUALLY PAY THE PRICE IF YOU ARE.

V. DANGERS IN OCCUPATIONS

Trenton, N. J., Oct. 15, 1913

HON. CALVIN N. KENDALL

Commissioner of Education, State of New Jersey
Trenton, N. J.

Dear Sir:

Toward the spreading of knowledge and information which may tend to decrease the appalling number of accidents occurring daily, the Department of Labor and the Employer's Liability Commission are very glad to lend a hand, in so far as they may be able through the use of the accident reports filed in this office by casualty insurance companies and employers.

To this end it may be valuable in an educational way to call the attention of pupils, who may at no distant day enlist in the great army of industrial workers, to some of the conditions they are likely to meet, which frequently result in accidental injury.

Broadly speaking, accidents may be divided into three classes: (1) those which no forethought or safeguard could prevent; (2) those which might have been prevented by the employer through the adoption of proper appliances and safeguards; (3) those which can be prevented only by the vigilance and the exercise of care on the part of the employee.

Our experience would lead us to conclude that by far the great majority of accidents comes under this third division.

If the great number of accidents occurring daily in our State is to be materially reduced, it can only be done by training the mind instinctively to consider "Safety First," and when better can this be begun than during the educational period!

Trusting the article which we enclose may be of some assistance in this work, and that it will grow, as we are assured it must, I am,

Very respectfully yours

LEWIS T. BRYANT
Commissioner of Labor

ACCIDENTS IN OCCUPATIONS

W. E. STUBBS, SECRETARY EMPLOYERS' LIABILITY COMMISSION

Let us in a general way take up the causes of accidents found in almost any factory, workshop, or mercantile establishment.

Slippery floors! How few of us notice this; we even give our home floors a high polish that we may enjoy the privilege of having the rugs slide from under us—a fall! and what then? Just ninety-nine accidents have come to this department due to slippery floors alone. How do they read? Listen:

kneecap broken (this means a permanently stiff leg, a limp, a crutch—who knows?); thigh-bone fractures, shoulder dislocated, wrist fractures, neck gashed, concussion of brain; and so on, good reader, for I am taking these at random to give you some idea of the perils of *slippery floors*.

Right here I should like to mention the practise of throwing banana parings and other refuse on the streets. The presence of these things makes it quite possible for the pedestrian to have a fall, with we know not what result.

Open holes, pits, etc. Forty accidents, including three fatals, under this heading in the 1913 showing. I have a picture before me of just this very thing; it is often to be found on our highways. An open manhole, around which is an iron railing, and the curious child is peeking over this guard to see what is going on. Or worse yet, the sidewalk entrance to the cellar. To be sure, we have city laws saying these doors must be guarded when open; but look for yourselves and see how vigilantly the city oversees these things!

Inspire the children to find such traps; let them bring in a list of the danger-spots they observe; train this faculty that they may be ever on the alert to protect both themselves and others. Who knows—they might be the means of seeing that the very laws, instituted by their forebears, are carried into effect.

Beside the open manhole, one not infrequently sees the small gasoline furnace used by plumbers; small children love to watch the men at work, little heeding the flame which a gust of wind blows wide, or a drop of water or some cold substance in the hot solder which causes an explosion, with bits of molten metal flying and burning; eleven eyes burned in one year, besides eighty other accidents due to molten metal.

Nails. If it becomes a boy's duty to aid in the shop, or even to attend to its brushing up and straightening up, let him do it conscientiously, and above all aim to wear stout-soled shoes. To step on a nail is painful; worse, it may develop into blood-poisoning and even cause death. A careless boy, one who does but half his duty, if that duty be to clean up the shop, places the welfare of others in much jeopardy. Forty-six of these cases have come to my attention this year, besides forty-one due to nails protruding; that is to say, a partly opened box, nails in the lid, lid on the floor, some one comes along and steps on it; or they tear their hands or arms; and of these last forty-one cases, seven have developed blood-poisoning.

Speaking of blood-poisoning brings up the great need of care in properly *cleansing* wounds, and binding them with *clean* bandages. From the 242 cases of infection recorded this year, six were fatal. I feel that too much stress cannot be laid upon this.

Solinters of wood and metals are often the cause of infection. Have the foreign substance removed instantly, and again the proper cleansing and bandaging.

Obstacles in path. Don't walk over things. That is to say, if a box is in an aisle where it has no business to be, don't step over or around it; put it where it belongs; it may cause the other fellow to fall if you yourself are not the victim. Thirty-seven accidents due to this, the reports of which include such injuries as broken kneecap, ruptured blood-vessel in leg, face and scalp lacerated, and concussion of the brain, together with many others.

Flying objects. Just 125 accidents to the eye alone from flying objects. Bear this in mind when chopping wood; some of these eyes have been lost in just that way. Goggles can be put on. Today they can be bought for ten cents. Which shall it be, an eye protected or an eye lost?

Elevators. Now let us start into the factory proper. The elevator: mere children run these machines, and little do they heed the dangers that surround them. In the first place, when such a trust is placed upon a boy, he must realize that the lives of others as well as his own rest in his hands. Don't try to do the "smart" thing. Twelve fatal accidents. Listen to the way some of them happened.

1. Boy was standing at elevator shaft, second floor. As automatic doors raised, boy looked over door to first floor. Head caught between door and platform of car, severing head.

2. The man forced open the doors opening into the elevator shaft and evidently looked down the shaft. The descending elevator caught his head and the operator found the body lying on the floor with the head wedged between wall of shaft and floor of car.

3. The deceased was holding on to elevator with both hands (under floor of car). The elevator was ascending from first floor, in charge of other persons. The man lost his hold and fell to basement in elevator pit.

And so on through the list. In many instances, in fact, in almost every one, the men or boys are themselves to blame. Accident 3 especially shows the desire to be "smart." This boy was seventeen years old and, as far as can be learned, wanted to do the "original" thing.

Ladders are the cause of many accidents. They are either not shod with spikes or non-slipping devices, or else are carelessly placed, or even worn or otherwise unfit for use. Forty-nine accidents due to ladders slipping; thirteen due to slipping off of ladders; twenty-six due to falling off of ladders, including one fatal; four due to ladders falling; four due to ladders breaking, and five due to ladders turning.

Gears are things that should be left severely alone while in motion. In many instances today gears are well covered, but some one is careless and fails to replace a guard, or the boy wants to "see the wheels go round." Fifty-nine accidents to fingers—fingers so essential to us, once gone, never to be replaced! Fifteen accidents to the arm; one reads, arm amputated, shoulder broken and head cut; another, arm amputated; and yet another, hand crushed and lacerated.

Shafting, belts and pulleys. These may be taken up together. I cite four fatal accidents to show in some manner how these accidents occur.

1. Internal injuries and broken legs. Caught on a piece of smooth shafting that runs about two feet above platform.

2. Back broken. Boy climbing up to revolving shaft, in turning to go back to his work, slipped and was caught by shaft.

3. We do not know if he was about to step over line shaft, or if he was about to repair a belt, when he was caught on revolving line shaft, his body striking pier, and was dead when first discovered.

4. It is assumed girl was looking for bad shell in back of machine, when, on raising her head, it struck the driving shaft of machine, causing the scalp to be torn completely from her head.

And one other which fortunately did not prove fatal. "She was in the act of combing her hair at the back of the roving frame, supposedly bending over and combing her hair downward, and her hair became caught around the lower back shaft of the frame." This same accident occurred to two different girls just about a year apart. The true solution of it is, that both girls, in their rush to get out early, stole the company's time for a hasty toilet, rather than to go to the dressing-rooms after dismissal.

An accident that almost proved fatal occurred to a lad of seventeen, no one being able to give a reason for his being where he was. "As nearly as we can determine the boy was trying some experiment with a piece of rope attached to an iron bar. The rope wound around the shaft (which

was some eight or nine feet above the floor) causing the iron to whirl around and strike him on the head, fracturing the skull." In this instance the shaft appeared so inaccessible as not to need covering, yet the boy managed to get injured by it.

Sixty-nine accidents on belts; of these four proved fatal. In many instances belts and pulleys are encased in wire or metal guards.

An accident characteristic of the awful whirl in which we live occurred to a lad of seventeen. He had turned the power off of a cylindrical dryer. Going at a terrific rate of speed, it required some time to slow down. The youth thinking to hurry things along pressed his hand against the huge cylinder, still rapidly moving, with the result that his arm was torn out at the socket. It is well said that to guard a machine against accident it must be absolutely "fool-proof."

In summarizing these general things I would like to insert a few *don't's*.

Don't let your curiosity get the best of you; ask to have things explained to you. Men like to see a boy take interest; self-investigation may mean self-disfigurement.

Don't forget that signs are posted for the purpose of being read and heeded. The Department of Labor of this State furnishes, free of charge, to all factories, large plainly lettered caution signs. These signs read as follows:

DANGER!

**Do not Clean Machinery While
it is in Motion**

LEWIS T. BRYANT, *Commissioner of Labor*

This card is placed here by the Authority of the State of New Jersey, and must not be **MUTILATED** or **REMOVED**.

NOTICE TO EMPLOYEES

USE EXTREME CARE to avoid accidents to person or machinery. Immediately discontinue the use of tools or machinery upon discovering that the same are out of repair, unsafe or unfit for use. **REPORT DEFECT AT ONCE.**

LEWIS T. BRYANT, *Commissioner of Labor*

This card is placed here by the Authority of the State of New Jersey, and must not be **MUTILATED** or **REMOVED**.

HANDS OFF MACHINE WHILE IN MOTION

**EMPLOYEES are
forbidden to ride
on this ELEVATOR**

It is not designed or equipped for carrying passengers.

**THE PROTECTING GUARDS on this MACHINE
must not be removed**

NOTICE

All persons are cautioned not to oil shafting or to put belts on while machinery is in motion.

NOTICE

Employees must not use machinery or tools other than according to instructions.

Safeguards as provided must not be detached.

And last of all—

Don't try to see how near you can come to danger without being hurt.

Trades. Having generalized on the causes of accidents, let us now take up the various trades into which the children of the State enter, many of them upon reaching the age of fourteen.

Perhaps the greatest of these industries is the manufacture of woolen goods, and under that head let us class likewise cottons and silks. Many of these mills are in or about Passaic County, although a few may be found in other parts of the State.

These places yield such accidents as cut temple, cheek, arm, due to shuttles flying from looms; fingers and hands injured on mangle rolls; fingers mashed and broken through thoughtless handling of the looms; fingers lost on shears; fingers lacerated in picker cylinder; and so on through the list of machines used in this work.

The tobacco industry ever seeks child labor. Here we have banding machines, pressing machines, cork tip machines, cigarette machines and staying machines.

In the canning factory districts great stress should be laid upon the absolute necessity of cleansing and caring for cuts and sores, and in such factories where they turn out their own cans you will find numerous accidents on all types of presses. In many instances where the manufacturer has gone to great expense to provide guards for these presses, the employee sees fit to remove them with the result that he is maimed and his employer is put to additional expense.

Below you will find a list of other industries, all of which are employing children.

Spool cotton and thread
 Manufacture of felt hats
 Hosiery
 Refining of metals
 Pencils and graphite
 Surgical dressings
 Can manufacture

Construction of elevators
 Paste board boxes
 Lamps and mantles
 Rubber goods
 Paper making
 Phonograph records
 Jute goods

Almost any employer would be only too glad to furnish the teacher with a list of the different kinds of machines used in his plant, and the Labor Department of the State of New Jersey each year publishes a pamphlet on the causes of accidents.

Encourage the pupil to seek and obtain pictures of these machines. The makers of machinery publish very interesting pamphlets; likewise some of the insurance companies. Suggest and supervise the building of scrap books to contain cuts of machines, these in turn to be classified either under industries or alphabetically, the former being preferable.

With this work may be correlated composition and drawing. Boys will be more ready to interest themselves in this work than girls, so aim to arouse the interest of both. And through it all and wherever feasible, lay stress upon whole clothes and absolute cleanliness. Torn overalls or jumpers are often the cause of serious injury or even loss of life; ragged ends will catch in fast-moving parts and the result is self-evident. Uncared for cuts and bruises will in almost every instance develop blood-poisoning.

In primitive days the timid deer continued to live and traverse the forest hills only by constant and unrelenting vigilance to escape his many foes. He must needs be on the alert every instant, and avoid the very suspicion of danger. The industrial worker of today is in like case. On every hand many dangers lurk, and the mind of his human successor must be as alert as was that of the cautious inhabitant of the forest.

Eternal vigilance is the price of safety.

VI. OTHER DANGERS

ELEVATOR

Avoid leaning against door.

Do not attempt to open elevator door to enter or leave. The operator should attend to this.

FIREARMS

Firearms of all sorts are dangerous. They are made to kill. Children should not be allowed by older people to handle them.

Never point a gun or pistol at any one. It is nearly always the gun or pistol that was thought to be unloaded that does the killing.

When several men are out hunting, if they separate, they should have an understanding where each is to go, so that they may not shoot each other.

Be careful about shooting a long range rifle. The balls from some rifles, when held at a proper angle, carry for several miles.

BOATING

Many lives are lost annually on the water. Both swimming and boating have peculiar dangers that those who indulge in them should be aware of.

A boat is no place to *play* in. Never rock the boat. Never try to exchange seats in deep water. Never stand up when the boat is away from the shore. Do not lean over the side of the boat.

APPENDIX F

EMERGENCY TREATMENT

This section has been edited and approved by a committee of the State Sanitary Association consisting of

ELIAS J. MARSH, M. D., *Chairman*, Paterson
GEORGE J. HOLMES, M. D., Newark
J. BROGNARD BETTS, Plainfield

Boards of education should supply to every school a simple emergency outfit. The medical inspector will unquestionably be willing to give instructions to the teachers and to the pupils in the use of this outfit. Teachers can profitably have illustrative exercises in its use with their pupils.

Emergency Outfit

- 1 4-oz. bottle of "Synol soap" or soft soap liniment
- 1 4-oz. bottle saturated solution boric acid
- 1 1-oz. bottle flexible collodion
- 1 1-oz. bottle 1-1000 solution adrevalin chlorid
- 1 2-oz. bottle aromatic spirits of ammonia
- 1 pair scissors
- 4 1-oz. packages red cross absorbent cotton
- 4 1-yd. packages sterile red cross gauze
- 6 2-in. gauze bandages
- 6 3-in. muslin bandages
- 1 roll 2-in. adhesive plaster
- 1 paper medium safety pins
- 1 hand brush

Note. Plaster, collodion, and similar substances seal the wounds on which they are used, so that if any pus germs have been introduced they are in the most favorable condition for doing harm. The use of plaster (except court plaster, to cover a trivial scrape not involving the entire thickness of the skin) must be absolutely condemned, for not only does plaster seal the wound, but it is also very likely not to be surgically clean. Collodion is not surgically dirty, like plaster, and the ether which it contains has some anti-septic properties, so it is not really as dangerous as plaster. But it also may seal up germs under it. A good rule to adopt is to use it only on slight, cleanly cut wounds made by sharp instruments, and to have it removed by a surgeon if inflammation sets in.

Instead of the above a first aid cabinet may be purchased for from \$1.25 to \$6.

Slight cuts (skin wound with slight bleeding). Such cuts should be thoroughly cleaned with *soap and hot water*, and the bleeding stopped by steady pressure with a little cotton, which may be wet with adrevalin solution. This preparation is of value only in slight superficial bleeding and is useless in severe hemorrhage. If the part cut was not very dirty at the time of injury, and the cut was made by a clean instrument or substance, a little cotton may now be applied and saturated with collodion, which dries and hardens into a protective covering. This may be hastened

by blowing on it. The collodion should not be applied until the bleeding has stopped and the edges of the wound are dry. It should never be used where there is danger of infection from dirt that may have entered the wound. In case of scalp wounds, the hair should be clipped for half an inch or more around the edges to give opportunity for cleaning and treatment.

Moderate cut (deep, or with free bleeding). Cuts of a more serious grade than the above should have the bleeding stopped by pressure with a small piece of gauze or cotton, which may if possible be wet with water as hot as can be borne. If this is not available, ice or snow may be used, but pressure must be the main reliance. The skin of the part and the edges of the wound should be thoroughly washed—scrubbed if possible—with *hot* water and soap, and then a piece of cotton wet with the boric acid solution applied and retained by a tight bandage, making sufficient pressure to stop the bleeding. The same treatment should be used for a slight cut made with an unclean instrument. In either case, the wound should be seen by a physician as soon as possible.

Severe cut. A cut involving a large artery is recognized by the jet of blood with immediate profuse hemorrhage. In such a case *firm pressure* by the *finger at once* at the point of injury is called for to stop the bleeding, as otherwise the loss of blood may be so severe as to cause collapse, or even death, while other measures are being prepared, even in a minute. The finger thus employed must not be removed till the supply to the artery involved is controlled by the application of a muslin bandage around the arm or leg between the body and the wound, and twisting it tight with a stick. After the bleeding is stopped, the wound may be washed clean as before, dressed with cotton held in place by a bandage, and the patient referred at once to a physician, who should have been sent for as soon as the injury occurred.

Nosebleed. Pack the bleeding nostril with a long twisted piece of cotton soaked in the adrevalin solution and thick enough to fill the nostril. Keep the patient quiet. Any nosebleed not controlled in this way in a few minutes should be referred to a doctor.

Bruises. To prevent "black eye" or other discoloration in case of bruises, apply a cloth wrung from cold water. The cloth should be continuously applied and *kept cold*.

Burns. Put the burned hand or finger in cool water to soothe the smarting. Apply a little common baking soda and afterward vaseline, fresh lard or cream.

Particle of dust, cinder, etc., in eye. When a "foreign body" flies into the eye, the resulting sensation of pain causes an instinctive squeezing of the lids together, and often a tendency to rub the eye. If the particle is small and not sharp, pain may be slight or absent, and the only sensation may be irritation and watering coming on later. If the eye be kept closed and quiet, often the tears will suffice to wash out the offending particle. Never wink or rub the eye as this may cause scratching and injury to the delicate surface of the eyeball. If the speck is not washed out in this way, separate the lids with the fingers, and search closely, under a bright light, first the inner surface of the lids, then the whites and finally the cornea, or clear part of the eye, for any speck on them. Very minute particles often cause severe discomfort. The inner surface of the upper lid may be readily exposed to view by pulling it downward by the lashes and then turning up over the point of a pencil. When found, it may be removed by wiping with the corner of a handkerchief, or a little cotton wrapped on the end of a match or toothpick. If this does not suffice, no farther effort should be made to remove it, but the child should be referred to a physician;

many eyes are seriously injured and some lost as the result of injury in the attempted removal of such particles by unskilful hands.

Stings. Remove the sting first either by squeezing or with a knife. Apply wet mud to prevent swelling.

Poison ivy. The ivy which is poisonous is that which has three leaves and is not the five-leaved. This is found clinging to fences and the stumps of trees in the woods during the spring and summer.

Bathing in buttermilk reduces the fever.

Sweet oil applied heals and soothes.

A mild solution of sugar of lead kills the poison and prevents spreading.

Knocked "senseless." When a child is knocked senseless on the playground it is only a form of fainting and should be treated much the same as an ordinary faint. Lay the child on his back, put something under the shoulders to lower the head that the blood may flow back to the brain, sprinkle cold water on the face.

Unless recovery is prompt and thorough, the child should be seen by a physician, even after recovery, as injuries to skull or brain may not reveal themselves until some hours later.

Hiccoughs. A single inspiration of the breath caused by a sudden contraction of the diaphragm causes hiccoughs. They may usually be cured by drinking a glass of water. If this is not effective a surprise for the child will often stop them.

Choking. First try slapping the back vigorously. If that is not effectual lay the child on the floor face downward and continue slapping the back, being sure that the head is a little lower than the rest of the body. If still obstinate take the child by the heels and hold head downward and let some one pound him on the back until the cause of the choking is removed.

Sprains. When one says that a wrist or an ankle is sprained he means that the ligaments which bind the bones together have been wrenched or torn. Sprains are very often much more serious than broken bones and much care must be taken that they do not result in stiffness. The sprained joint should at once be put into very hot water and this water should be kept very warm for some time. Absolute rest is then required. Careful rubbing of the sprained joint often shortens the time needed for recovery and very often prevents stiffness.

Dislocation. When the bone of a joint is forced out of place the ligaments are torn and the muscles are apt to be stretched and irritated and we say the bone is out of joint. A physician must attend to putting the joint back in place, but meanwhile the child should be kept as quiet as possible. It is well to bind the injured member close to the body, if the injury is of the shoulder or arm; or to tie together the thighs, knees and ankles, if the injury is of the lower extremity.

Broken bones. The two ends of the broken bone should be brought together as soon as possible. The doctor should be called at once, but in case the child has to be carried a long distance the ends of the bone might injure the flesh. It is best to bind the limb close against the body if the injury is of the arms; or to tie together the thighs, knees and ankles, if the injury is of the leg.

Drowning. The "Schaefer Method" for resuscitation of the apparently drowned is as follows:

When a person is taken out of the water in an apparently drowned condition, there must be no loss of time in attempting to restore breathing.

The most practical method of artificial respiration is the one devised by Professor Schaefer, of Edinburgh University. The procedure is as follows:

1. Turn the patient on his face. Loosen clothing that may hinder breathing movements of the chest. Wipe out quickly, but as thoroughly as possible, all froth and dirt that may be in the mouth and throat. Force mouth open and pull tongue forward if necessary.

2. Turn patient's face to his right and rest his head upon his bent left arm so that mouth and nostrils are free for air entrance.

3. Then kneel astride, or on one side of the patient's body, facing his head. Place your hands spread out on the small of his back with the thumbs parallel and close together pointing toward the patient's head, spread the fingers out on each side of the body over the lowest ribs, then lean forward and keeping the arms straight allow the weight of your body to come on to your hands and so to produce a slow steady pressure upon the patient's ribs. The object of this is to press the ribs downward and inward so as to *decrease* the size of the chest cavity. By this means the air and water, if there be any, are driven out of the patient's air passages. Then swing backward so as to relieve the pressure on the patient's body, but still keep your hands in place; the object being to allow the ribs to spring back and thus *increase* the size of the chest cavity. Repeat this forward and backward movement, pressure and relaxation of pressure, every four or five seconds. In other words, sway your body regularly forward and backward as described twelve or fifteen times a minute without any marked pause between the movements.

Continue this procedure until natural breathing is resumed. There may be no success for a long period; but breathing has been restored by this method when the patient had been breathless as long as two hours.

If help is available, hot flannels may be applied to the limbs and body and friction to the hands and feet for the promotion of warmth; but on no account should the regular effort to restore breathing be interrupted nor should any attempt be made to give restoratives by the mouth until natural breathing has been established and you have tested very carefully the ability of the patient to swallow.

When the patient begins to breathe, he may be turned on his back and further treatment for promotion of warmth and circulation may be adopted. He should be wrapped in warm blankets or coats, and everything done to restore heat; hot flannels over the abdomen, hot water bottles or any hot objects, properly protected, in the arm pits, at the soles of the feet and so on.

When the patient has regained consciousness and is breathing regularly a teaspoonful of warm water may be given carefully to see if he can swallow. If the power of swallowing has returned, a small quantity of *hot black coffee, beef tea, or warm brandy and water* may be given. The patient should be gotten to bed as soon as possible and encouraged to sleep. He should be watched very carefully for some time to see that breathing does not fail.

The advantages of this method of artificial respiration over the older ones are:

1. The ease with which artificial respiration may be performed, hardly any exertion being required.

2. The efficiency with which the exchange of air in the lungs can be produced.

3. The extreme simplicity of the procedure.

4. The impossibility of the air-passages being blocked by the falling back of the tongue.

5. The readiness with which water and mucus are expelled from the air-passages through the mouth and nostrils.

6. It involves no risk of injury to the congested liver or to any other organ.

7. It is very easily remembered, and can be put into operation by one person.

—Abstract from *Handbook* of the Royal Life-Saving Society, prepared by Professor Joseph E. Roycroft, Director of Hygiene and Physical Education, Princeton University.

Sunstroke. 1. Lay the person in a shady place.

2. Loosen the clothing.

3. Reduce the heat of the body at once by application of cold water and ice.

4. Send for the doctor at once.

5. Give no medicine or stimulants as the body is already overheated.

Warning-signs of heat prostration are sick stomach, faintness, dizziness; perspiration ceases and skin becomes dry and hot.

Sunstrokes and heat prostrations may be avoided by following these rules:

1. Keep the general health good.

2. Avoid excesses in eating, drinking, exercise.

3. Avoid use of liquors.

4. Dress according to the season.

5. Drink plenty of cool water.

6. Take plenty of sleep in a well-ventilated room.

7. Avoid constipation.

Clothing on fire. Wrap him in a blanket, rug, cloak or shawl to smother the flames. Roll him and slap the burning parts to put out the flame and then throw on water.

Smothering the flames is the best way to put out any small fire.

Fainting. The fainting person should be laid flat with head lower than body. Secure fresh air and keep away bystanders. Give a teaspoonful of aromatic spirits of ammonia in a little cold water, and allow patient to smell the bottle.

Electric shock. A patient rendered unconscious calls for artificial respiration, as after drowning, but it should be continued longer before giving up.

The *American Red Cross Abridged Text-Book on First Aid, General Edition*, may be had for 30 cents a copy (net) by sending to First Aid Department, American Red Cross, Washington, D. C. This is fully illustrated and authoritative.

A *Hand-Book of First Aid* published in paper cover by Johnson and Johnson, New Brunswick, N. J., may be had for 10 cents. This is complete enough for use in elementary grades. The same firm publishes a larger book of 140 pages in board covers entitled *First Aid Manual*. The firm will also send on application, free of charge, a set of *Contagious Disease Literature*

APPENDIX G

I. PERIOD OF ISOLATION AND EXCLUSION IN COMMUNICABLE DISEASES

The New Jersey State Board of Health and the State Medical Society of New Jersey have approved of the following amended Report of the Committee of the Massachusetts Association of Boards of Health upon the period of isolation and exclusion from school in cases of communicable diseases.

The committee appointed to consider and report upon the period of isolation and exclusion from school in cases of communicable disease hereby submits the following report:

Your committee realized that there are many communicable diseases, which in the stage of our present civilization, it is impracticable to isolate, and that there are many communicable diseases whose method of transmission is not definitely known; therefore it has been deemed expedient to omit such from this list.

Your committee has approached this task with an earnest desire to annihilate the superstitions which have surrounded the theory of the transmission of disease, to eliminate the hardships attendant upon unreasonable isolation and to educate the public in the methods of controlling disease.

Your committee feels that the adoption of these recommendations by the Boards of Health of the various cities and towns of the Commonwealth would result in a more uniform and more reasonable period of isolation and exclusion.

WILLIAM J. GALLIVAN, M. D., *Chairman*
FRANCIS G. CURTIS, M. D.
FRED W. HOWE
EDWIN H. PLACE, M. D.

DIPHTHERIA

Modes of infection. Secretions of the upper air passages or from any infected area.

Transmission. By direct contact with patient or carrier. By modified contact, i. e., articles which have been recently infected by the fresh secretions.

Period of isolation. Until two successive negative, or non-virulent cultures have been obtained from both nose and throat; the last culture in each case to be taken by the Board of Health after an interval of at least 24 hours.

Method of control

A. Recognition of the disease

1. By inspection
2. By culturing all inflammations of mucuous membranes
3. By culturing all persons known to be exposed

B. Isolation

1. Home
2. Hospital

C. Immunization—by anti-toxin

D. Disinfection

1. By boiling objects infected
2. By scrubbing woodwork and furniture

E. Schools

1. Exclusion. All members of a household where a person is ill with diphtheria shall be excluded from school until one week has expired from the date of the last exposure to the disease, unless immunized by anti-toxin and showing two negative cultures.

2. Closing of schools. Schools generally should not be closed during an epidemic of diphtheria; daily inspection and culturing will achieve better results. The local school and health authorities should decide when the schools are to be closed.
3. All members of a household where a person is isolated on account of being ill with diphtheria may be allowed to continue at their usual occupations, except those who are engaged in the handling of milk.

SCARLET FEVER

Modes of infection. Secretions of the upper air passages; mucous or serous discharge from the ear or any skin lesion of the body.

Transmission. By direct contact with patient or carrier. By modified contact, i. e., articles which have been recently infected by the fresh secretions.

Period of isolation. There should be a minimum isolation period of five weeks; period of isolation should continue during the presence of any discharge from the ear, nose or lesions of the skin.

Method of control

- A. Recognition of disease
- B. Isolation
 1. Home
 2. Hospital
- C. Immunization—uncertain
- D. Disinfection
 1. By boiling objects infected
 2. By scrubbing woodwork and furniture
- E. Schools
 1. Exclusion. All members of a household where a person is ill with scarlet fever shall be excluded from school until one week has expired from the date of the last exposure to the disease unless immunized by a previous attack of the disease.
 2. Closing of schools. Schools generally should not be closed during an epidemic of scarlet fever. Daily inspection of pupils will achieve better results. The local school and health authorities should decide when the schools are to be closed.
 3. All members of a household where a person is isolated on account of being ill with scarlet fever may be allowed to continue at their usual occupations, except those who are engaged in the handling of milk and other food usually eaten without cooking.

GERMAN MEASLES

Modes of infection. Secretions of the upper air passages.

Transmission. By direct contact with patient.

Period of isolation. Period of isolation should continue for seven days after the appearance of the eruption.

Method of control

- A. Recognition of disease
- B. Isolation—home
- C. Immunization—none
- D. Disinfection—unnecessary
- E. Schools
 1. Exclusion. Only the patient shall be excluded from school.
 2. Closing of schools. Schools should not be closed during an epidemic of German measles. Daily inspection of pupils will achieve better results.
 3. All members of a household where a person is isolated on account of being ill with German measles may be allowed to continue at their usual occupations.

MEASLES

Modes of infection. Secretions of the upper air passages.

Transmission. By direct contact with patient.

Period of isolation. Period of isolation should continue for ten days from the appearance of the eruption.

Method of control**A. Recognition of disease**

1. Koplik spots appear from one to six days before appearance of rash

B. Isolation

1. Home
2. Hospital

C. Immunization—none**D. Disinfection—unnecessary****E. Schools**

1. Exclusion. All members of a household where a person is ill with measles shall be excluded from school until two weeks have expired from the date of the last exposure, unless immunized by a previous attack of the disease.
2. Closing of schools. Schools generally should not be closed during an epidemic of measles. Daily inspection of pupils will achieve better results. The local school and health authorities should decide when the schools are to be closed.
3. All members of a household where a person is isolated on account of being ill with measles may be allowed to continue at their usual occupations.

CHICKEN POX

Modes of infection. Lesions of skin and mucous membrane.

Transmission. By direct contact with patient. By modified contact, i. e., articles which have been recently infected.

Period of isolation. Period of isolation should continue during the presence of the skin or mucous membrane lesion.

Method of control**A. Recognition of disease****B. Isolation**

1. Home
2. Hospital

C. Immunization—none**D. Disinfection**

1. By boiling objects infected
2. By scrubbing woodwork and furniture

E. Schools

1. Exclusion. All members of a household where a person is ill with chicken pox shall be excluded from school for three weeks after the last exposure to the disease, unless immunized by previous attack of the disease.
2. Closing of schools. Schools should not be closed during an epidemic of chicken pox. Daily inspection of pupils will achieve better results.
3. All members of a household where a person is isolated on account of being ill with chicken pox may be allowed to continue at their usual occupations.

WHOOPING COUGH

Modes of infection. Secretions of the upper air passages.

Transmission. By direct contact with patient.

Period of isolation. There should be a minimum isolation period of three weeks; period of isolation should continue during the paroxysmal stage.

Method of control

- A. Recognition of disease. Catarrhal symptoms of nose and eyes precede the paroxysmal stage.
- B. Isolation
 - 1. Home
 - 2. Hospital
- C. Immunization—uncertain
- D. Disinfection—unnecessary
- E. Schools
 - 1. Exclusion. All members of a household where a person is ill with whooping cough shall be excluded from school until two weeks have expired from the date of the last exposure to the disease, unless immunized by previous attack of the disease.
 - 2. Closing of schools. Schools should not be closed during an epidemic of whooping cough. Daily inspection of pupils will achieve better results.
 - 3. All members of a household where a person is isolated on account of being ill with whooping cough may be allowed to continue at their usual occupations.

MUMPS

Modes of infection. Secretions of the mouth.

Transmission. By direct contact with the patient.

Period of isolation. There should be a period of isolation of three weeks.

Method of control

- A. Recognition of disease. Steno's duct is inflamed in the early stage of disease.
- B. Isolation
 - 1. Home
 - 2. Hospital
- C. Immunization—none
- D. Disinfection—unnecessary
- E. Schools
 - 1. Exclusion. All members of a household in which a person is ill with mumps shall be excluded from school until two weeks have expired from the date of the last exposure, unless immunized by a previous attack of the disease.
 - 2. Closing of schools. Schools should not be closed during an epidemic of mumps. Daily inspection of pupils will achieve better results.
 - 3. All members of a household where a person is isolated on account of being ill with mumps may be allowed to continue at their usual occupations.

TRACHOMA

Modes of infection. Secretions of the eye.

Transmission. By direct contact with the patient. By modified contact with articles which have been recently infected by fresh secretions.

Period of isolation. Until two weeks have expired since the last appearance of secretions, with freedom from redness of the conjunctiva.

Method of control

- A. Recognition of disease
- B. Isolation
 - 1. Home
 - 2. Hospital

C. Immunization—none

D. Disinfection

1. By boiling objects infected
2. By scrubbing woodwork and furniture

E. Schools

1. Exclusion. Only the patient shall be excluded from school.
2. Closing of schools. Schools should not be closed during an epidemic of trachoma. Daily inspection of pupils will achieve better results.
3. All members of a household where a person is ill with trachoma may be allowed to continue at their usual occupations.

INFLUENZA

Modes of infection. Secretions of the upper air passages.

Transmission. By direct contact with patient. By modified contact, i. e., articles which have been recently infected by the fresh secretions.

Period of isolation. Until subsidence of catarrhal symptoms.

Method of control

A. Recognition of disease

B. Isolation

1. Home
2. Hospital

C. Immunization—none

D. Disinfection—unnecessary

E. Schools

1. Exclusion. Only the patient to be excluded from school.
2. Closing of schools. Schools should not be closed during an epidemic of influenza. Daily inspection of pupils will achieve better results.
3. All members of a household where a person is isolated on account of being ill with influenza may be allowed to continue at their usual occupations.

TYPHUS FEVER

Modes of infection. From the blood stream.

Transmission. Through pediculi.

Period of isolation. Until recovery, and until the patient is free from pediculi.

Method of control

A. Recognition of the disease

B. Isolation

1. Home
2. Hospital

C. Immunization—none

D. Disinfection—extermination of pediculi

E. Schools

1. Exclusion. All members of a household where a person is ill with typhus fever shall be excluded from school until free from pediculi.
2. Closing of schools. Schools generally should not be closed during an epidemic of typhus fever. Daily inspection of pupils will achieve better results. The local school and health authorities should decide when the schools are to be closed.
3. All members of a household where a person is isolated on account of being ill with typhus fever may be allowed to engage in their usual occupations provided they are free from pediculi.

TYPHOID FEVER

Modes of infection. Urine and feces.

Transmission. By direct contact with patient or carrier. By modified contact, i. e., articles which have been recently infected; particularly milk, and such other foods usually eaten without cooking, and water.

Period of isolation. Until recovery and until urine and feces are free from bacilli.

Method of control**A. Recognition of disease**

1. Conradi test
2. Widal test

B. Isolation

1. Home
2. Hospital

C. Immunization—typhoid vaccine**D. Disinfection**

1. By boiling objects infected
2. By scrubbing woodwork and furniture

E. Schools

1. Exclusion. All members of a household where a person is ill with typhoid fever shall be excluded from school until two weeks have expired from the date of the last exposure to the disease, unless immunized with typhoid vaccine or by previous attack of the disease.
2. Closing of schools. Schools generally should not be closed during an epidemic of typhoid fever. Daily inspection of pupils, including Conradi and Widal tests, will achieve better results. The local school and health authorities should decide when the schools are to be closed.
3. All members of a household where a person is isolated on account of being ill with typhoid fever may be allowed to continue at their usual occupations except those who are engaged in the handling of milk.

CHOLERA

Modes of infection. Feces.

Transmission. By direct contact with patient or carrier. By modified contact, i. e., articles which have been recently infected.

Period of isolation. Until the feces are free from bacilli.

Method of control**A. Recognition of disease****B. Isolation**

1. Home
2. Hospital

C. Immunization—doubtful**D. Disinfection**

1. By boiling objects infected
2. By scrubbing woodwork and furniture

E. Schools

1. Exclusion. All members of a household where a person is ill with cholera shall be excluded from school until one week has expired from the date of the last exposure to the disease.
2. Closing of schools. Schools should not be closed during an epidemic of cholera. Daily inspection of pupils will achieve better results.
3. All members of a household where a person is isolated on account of being ill with cholera may be allowed to continue at their usual occupations except those who are engaged in the handling of milk.

SMALLPOX

Modes of infection. Lesions of the skin and mucous membrane.

Transmission. By direct contact with patient. By modified contact, i. e., articles which have been recently infected.

Period of isolation. Until recovery and until lesions have healed.

Method of control

A. Recognition of disease

B. Isolation—hospital

C. Immunization—by vaccination

D. Disinfection

1. By boiling objects infected

2. By scrubbing woodwork and furniture

E. Schools

1. Exclusion. All members of a household where a person is ill with smallpox shall be excluded from school until two weeks have expired from the date of the last exposure to the disease, unless immunized by recent successful vaccination. They should not be permitted to re-enter school without permission of the local board of health and the medical inspector.

2. Closing of schools. Schools generally should not be closed during an epidemic of smallpox. Revaccination of pupils will achieve better results. The local school and health authorities should decide when the schools are to be closed.

3. All members of a household where a person is isolated on account of being ill with smallpox may be allowed to engage in their usual occupations providing they have been recently successfully vaccinated.

PULMONARY TUBERCULOSIS

Modes of infection. Secretions of the upper air passages.

Transmission. By direct contact with patient. By modified contact, i. e., articles which have been recently infected by the fresh secretions.

Period of isolation. Only the recalcitrant patient should be isolated.

A. Recognition of disease

Method of control

B. Isolation—hospital

C. Immunization—doubtful

D. Disinfection

1. By boiling objects infected

2. By scrubbing woodwork and furniture

E. Schools

1. Exclusion. Only the patient shall be excluded from school. Special schools for the tuberculous are recommended.

2. Closing of schools. Schools should not be closed on account of the prevalency of tuberculosis. Daily inspection of pupils will achieve better results.

3. All members of a household where a person is ill with pulmonary tuberculosis may engage in their usual occupations, except those engaged in the handling of milk, and other food supplies usually eaten without cooking.

OPHTHALMIA

Modes of infection. Secretions of the eye.

Transmission. By direct contact with patient. By modified contact, i. e., articles which have been recently infected by the fresh secretions.

Period of isolation. Until two successive cultures, negative of gonococci, have been obtained with an interim of 24 hours, and until the purulent discharge has disappeared.

Method of control

- A. Recognition of disease—smears
- B. Isolation
 - 1. Home
 - 2. Hospital
- C. Immunization—silver salts
- D. Disinfection
 - 1. By boiling objects infected
 - 2. By scrubbing woodwork and furniture
- E. Schools
 - 1. Exclusion. Only the patient shall be excluded from school.
 - 2. Closing of schools. Schools shall not be closed during an epidemic of ophthalmia. Daily inspection of pupils will achieve better results.
 - 3. All members of a household where a person is isolated on account of being ill with ophthalmia may be allowed to continue at their usual occupations.

II. HOW TO PREVENT TUBERCULOSIS**BOARD OF HEALTH OF STATE OF NEW JERSEY**

Every three minutes someone in the United States dies from tuberculosis. In New Jersey 4540 persons died from it in 1910. In every *nine* persons who dies in New Jersey one dies of tuberculosis.

Causes of the Disease

The disease is caused by a living *germ* which grows in the body and *destroys* its tissues. The germs may grow in almost any part of the body, but they grow most readily in the *lungs* and cause "*consumption*."

Early Symptoms

Undue weariness or weakness.
Persistent coughing and spitting.
Frequent colds, or a cold that hangs on.
Loss of appetite, of flesh, of color.
Fever in the afternoon.
Pains in chest, pleurisy.
 Anyone suffering from one or more of the above symptoms should consult a physician at once.

Cost of Tuberculosis

Tuberculosis attacks people chiefly in the active, productive period of life. Many children are made *orphans* by it. Its long continued course impoverishes many families. It causes a great *loss* to the community. But its greatest cost is in needless human *suffering*.

How the Disease Spreads

Tuberculosis is *not* hereditary.
 The germs get into the body *after* birth. They are in the consumptive's spit, and are thus carried from sick to well persons.
 The disease usually spreads in the *home*, where contact with the patient is

close and *long continued*. Children get the germs more readily than older people because their bodies are more delicate.

The disease may also spread in shops or factories where consumptives spend much time. *Flies* help spread it by carrying the germs from the consumptive's *spit* to our *foods*.

People, especially children, sometimes become infected by drinking *milk* from tuberculous cows.

Where It Thrives

Tuberculosis is a *house disease* and often attacks several persons in the same house. It thrives in dirt and filth where people are *careless* and *unclean*.

Sunlight and fresh air kill the germs and help prevent it.

The germs grow best in a body weakened from other causes, some of which are:

Poor teeth and unclean mouths.

Intemperance and all *excesses*.

Insufficient or *bad food*.

Foul air and *dark rooms*.

Overcrowding, dust, overwork.

Other diseases—measles, gripe, typhoid fever, pneumonia, whooping cough.

Cure

Tuberculosis may be cured by regular habits combined with plenty of *fresh air*, *food* and *rest*. Patent medicines do not cure. Their use is harmful. A sanatorium is the best place to take the cure. Patients who remain at home should be under the care of a *physician*.

To insure a permanent cure, it is necessary to persevere in careful living long after all symptoms have disappeared.

Keep up courage and cheerfulness.

Prevention

You should prevent tuberculosis by doing two things:

1. *Avoid* the germs.

2. Keep your body so *strong* and *well* that the germs cannot grow in it.

Avoid the germs by sending advanced cases to hospitals where they cannot infect others. Teach patients cared for at home to *destroy* their spit.

Keep your body strong by living a regular life in the open air, taking plenty of exercise and sleep, eating proper food and having the teeth in good condition so that the food can be well masticated.

Health Maxims

Live and work in the *fresh air*.

Keep teeth *clean* and in good repair.

Eat plain wholesome *food*.

Get plenty of *rest* and *sleep*.

Take some *regular exercise*.

Avoid *alcoholic drinks*. They weaken the body.

Avoid patent medicines. They are *worthless* and *harmful*.

Teach consumptives to *destroy* their *spit*.

Vote for freeholders who will establish hospitals for consumptives.

Send your children to *fresh air schools*.

Cultivate *cheerfulness*.

The Law and Tuberculosis

The law requires:

County Boards of Freeholders to provide hospitals for consumptives.

Physicians to report all cases to the Board of Health. These reports are confidential.

Consumptives to destroy their spit.

Health officials to furnish such instruction, literature, or such other material as may be needed to prevent the spread of the disease.

Health officials to disinfect rooms vacated by consumptives.

The common drinking-cup to be abolished.

The law permits:

Boards of Health and judges to remove careless patients to hospitals.

Boards of Health to establish dispensaries and employ visiting nurses.

Boards of Health to stop the sale of milk from tuberculous cows.

Disease germs are constantly being deposited on articles by the touch of diseased persons and by air contaminated with the breath of such persons or with their clothing. Proper protection of the healthy child requires a periodic disinfecting cleansing of the schoolroom and its contents.

More attention is given to this in city schools than in country schools; but there is no more need for it in one case than in the other.

Rules and Regulations

The following statements and reprints of rules and regulations indicate the practices becoming common in all school districts which give intelligent care to preserving the health of school children.

Superintendent Charles B. Boyer of Atlantic City writes:

We have no rules for disinfecting textbooks. Textbooks that have been carried to homes where there is a contagious disease are destroyed.

Our school buildings are fumigated every second Saturday. This work is done by the janitors of the schools during the afternoon hours of Saturday. The Board of Education pays janitors \$2.50 extra for each fumigation.

By using this method we find our buildings are properly fumigated at regular intervals, and in case of contagious disease, or of pupils coming from homes where there is a contagious disease, we are in position to fumigate rooms immediately after the school season ends. We never permit a room to be closed on account of contagious disease but take every precaution possible to prevent the spread of contagion.

We have been using formaldehyde steam generators for fumigation purposes. This is perhaps the most effective method but it requires a great deal of work and long hours to fumigate a large building. Last year we experimented with a receptacle in each room containing potassium permanganate over which is poured about a pint of liquid formaldehyde. This is done on Saturday afternoon, after which the building is closed up and allowed to remain in that condition until Monday morning. We find that this method is very successful and I think we shall dispense with the steam generators.

Following are Rules and Regulations for Fumigation adopted by the Board of Education, Atlantic City, October 16, 1912:

1. The classrooms, offices, library, halls and toilet-rooms of the respective school buildings of this city shall be fumigated by the janitor of each school during the afternoon (after 12 o'clock) every second Saturday.

2. Each janitor shall receive from the Board of Education the sum of \$2.50 for services rendered on said Saturday afternoons.

3. A period of not less than 15 minutes shall be allotted for the fumigation of each classroom, office, library, hall or halls and toilet-rooms in the respective school buildings. In buildings containing 12 classrooms or less, the time to be given to each classroom should be not less than 20 minutes. The work must be thorough and effective, otherwise it is useless and time and money are wasted.

4. The Board of Education will furnish each janitor with a steam generator, wood alcohol and the necessary formaldehyde.

5. Special fumigation of individual rooms, as directed by the medical inspectors, shall be done by the janitors without extra compensation.

6. The fumigation shall be under the direction and supervision of the medical inspectors and said inspectors are to report to the Board of Education the neglect of duty of any janitor.

The following is taken from *Rules and Regulations adopted by the Board of Education of Camden for Prevention of Contagious and Communicable Diseases*.

1. Each day during the prevalence of infectious disease in a school building, after school is dismissed, the janitor shall scrub with warm water, soap and stiff scrubbing brush, or wipe off with a solution of bichloride of mercury (1 to 2000) or other disinfectant designated by the medical inspector, all parts of doors, casings and other woodwork which can be touched by the hands of the children, including seats and desks.

2. The floor should be in good repair, without open cracks or crevices. In every division when a case of contagious or communicable disease has been reported, the floor should be mopped with a solution of bichloride of mercury (1 to 2000) or other disinfectant provided for such use, walls brushed down and rooms fumigated.

3. All walls, maps, blackboards, tops of closets, bookcases, etc., in school buildings must be brushed down at least once a month.

4. Lead pencils (there should be no slates) should every day be immersed in a 5 per cent solution (1 to 20) of carbolic acid and wiped dry.

5. The difficulty attending the cleansing of books should cause great care to be taken by teachers to prevent their being passed from hand to hand, or touched by anyone except the child to whom they belong or to whom they may be assigned. Books which have been used by a pupil who is suffering from any one of the communicable diseases should be destroyed by fire, or they may be treated by exposure to formaldehyde gas.

6. During each vacation the walls and woodwork, including doors, desks and floors, should be wetted with a solution of bichloride of mercury (1 to 1000) and the windows should be kept open to admit great floods of sunlight and pure air. Finally, scrub with clean water.

7. School buildings should be fumigated on Saturday of each week.

8. Light and airy cloak-rooms should always be provided, and hooks should be so separated that the garments of the different pupils will not come into contact.

It is the general practice in this State to destroy books that have been taken into houses where there is contagious disease, or which it is suspected may be carriers of disease.

APPENDIX H

FLIES AND MOSQUITOES

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The role of flies and mosquitoes in spreading disease has been thoroughly understood for only a few years. They have been regarded as nuisances by everyone, but have been suspected in the past, by only a few, of being agents in spreading disease. Today these insects, together with the flea, the body louse, and the bedbug, stand convicted of the crime of spreading the germs of disease by carrying them from infected to uninfected places and persons.

It is not difficult in these days of vaccination and inoculation for the thoughtful person to understand how blood-sucking insects can and do transfer the germs of yellow fever, malaria, typhus fever, infantile paralysis, plague, etc., from one person to another. Public opinion is in this country so almost instinctively opposed to the bedbug, the flea and the louse that the new knowledge of the fact that they are carriers of disease in addition to being dirty and repulsive, is sufficient to lead everyone to make even more persistent efforts to exterminate the pests.

Fortunately, plague and typhus fever are not prevalent in New Jersey, so the simple statement of the fact that bedbugs, fleas and lice are the principal, if not the only, agents in the transmission of these diseases from person to person is sufficient in this place.

The mosquito belongs to the class of blood-sucking insects. There are two kinds or species that are the sole agents in the transmission of yellow fever and malaria. The species that is responsible for infection with the malarial organism is called anopheles, and is very common in New Jersey. The one that transmits yellow fever, as demonstrated by Doctors Reed and Lazear in Cuba, is known as the stegomyia, and is seldom if ever seen in New Jersey.

These two species of mosquitoes not only spread the particular disease with which they may be infected, but further than that they keep the germs alive in their bodies while certain changes take place that enable these germs to cause the sickness, malaria or yellow fever, in the person who is bitten by the infected mosquito. That is to say, if it were not for these two kinds of mosquitoes, the two diseases, malaria and yellow fever, would be practically non-existent. The medical and sanitary campaign instituted in the Canal Zone is based in large part upon this fundamental fact. The successful warfare against the mosquitoes, the destruction of their breeding places, and the protection of the people from the few mosquitoes that have escaped extermination, have made it possible for white men to live on the Isthmus and to accomplish the work of digging the canal.

The campaign on the Isthmus of Panama was waged along two lines:

1. The destruction of the breeding places by (a) draining the low lying lands and swamps, and (b) by treating the still waters, that could not be drained, with crude oil, or "larvicide."

2. The thorough screening of all houses, camps, and other living places.

The practical bearing of all this for us in New Jersey is simply this: the great amount of sickness and the loss of time, money, and happiness due to malaria are preventable; and the campaign against the mosquito which is under way in various parts of the state has already accomplished remarkable results in reducing the amount of malaria and is one in which everyone can cooperate.

Detailed accounts of the life history of the mosquito, the ways in which it acts as the agent in spreading malaria, and the methods of destroying the breeding places may be found in the publications of the State Agricultural Experiment Station at New Brunswick, and in the pamphlets published by the United States Public Health Service.

The real importance of the house and stable fly as disease carriers is not quite so well understood by people in general, in spite of the "Swat the Fly" campaigns that have been organized during recent years. These two kinds of flies are even more important in most communities than the mosquito because they are many times more numerous and because they are agents in spreading many diseases instead of a special one. The bad reputation of the fly is by no means of recent date. The knowledge of his power for harm is said to be crystallized in the old Hebrew word "Beelzebub," from "Baal," meaning "lord or god" and "Zebub," meaning "flies" or "dung." The history of Egypt contains record of a plague of flies over three thousand years ago; and strangely enough, another such plague occurred in 1909, when three thousand children died in Cairo alone in less than two months.

Many persons still honestly not only doubt that the fly is one of the most important factors known in the transmission of certain kinds of germ diseases, but even discredit the idea that it has any part in spreading the organisms of such diseases as typhoid, tuberculosis, anthrax, ophthalmia, cholera, infantile paralysis, and bowel diseases.

Consideration must be given then to the question: Is the fly an important factor in the distribution of disease organisms? The conclusion which has led the sanitarian to answer this question in the affirmative is based upon two kinds of evidence: (1) circumstantial and (2) experimental. Under the first head will fall the observations and conclusions of skilled medical officers who were in the United States military camps during the Spanish War and in the South African camps during the Boer War. These men commented on the enormous number of flies frequenting the latrines and mess tents. The result of this condition in the Boer War was that about 30 per cent of the deaths in the English army were due to typhoid, and one fifth of total number of American soldiers in the military camps in 1898 were infected with typhoid fever. Where the mess tents were screened and the food protected from infected flies, little or no typhoid was contracted. When the cold weather came the flies disappeared and the typhoid died down. The conclusion reached was: "Flies undoubtedly served as carriers of infection."

Similar observations have been made repeatedly in cases where typhoid has spread from sections of town that were unsanitary, and where open privies were in existence, to neighboring houses, having been carried by flies from infected matter to food. These investigations made it clear that the fly was not only an irritating and disgusting nuisance but was also a serious factor in the spread of one of our most prevalent diseases.

The experimental evidence on the question is very full and convincing; only a few examples based on careful bacteriological investigations may be cited.

The fly can carry the typhoid bacillus either externally or internally. In the latter case the length of time that the bacillus is able to survive is considerably increased.

The typhoid bacillus has been recovered from flies twenty-three days after they have been infected by feeding on typhoid infected matter.

The typhoid bacillus was recovered five times in eighteen experiments from flies caught in two undrained privies and in the room of a typhoid patient.

Flies are able for at least forty-eight hours after infection, to infect the surface on which they walk.

"A single instance, of many which are on record, has been used by Hewitt as an illustration of the way in which flies may disseminate infec-

tion. It occurred in Denver and is recorded by the secretary of the Colorado State Board of Health. In August the wife of a dairyman was infected with the typhoid bacillus and remained at home for about three weeks before being removed to the hospital at the end of August. In September numerous cases of fever were reported in the northern part of the city, and on investigation it was found that all these cases had been obtaining their milk from this dairy. The conditions of the dairy were then inquired into and it was found that the dairyman himself was suffering from a mild case of typhoid but was still delivering his milk. The water supply was fairly good. It was found, however, that both husband and wife had been using an open privy located within thirty-five feet of the milk house, which was unscreened and open to flies. A gelatin culture exposed to flies for thirty minutes in the rear of the privy vault and in the milk house among the milk cans gave numerous colonies of typhoid bacilli and colon bacilli. The source of infection of the dairyman's wife's case was unknown. 'But,' the report states, 'I am positive that in all the cases that occurred on this milk route the infection was due to bacilli carried from the privy by the flies and deposited upon the milk cans, separator and utensils in the milk house, thereby contaminating the milk.' The dairyman supplied milk to 143 customers. Fifty-five cases of typhoid fever occurred and six deaths resulted therefrom. This case speaks for itself and leaves little more to be said with regard to the part which flies may play in the dissemination of typhoid."

Similar results have been obtained in investigations on other diseases than typhoid, such as infantile diarrhea, tuberculosis, infected eyes, anthrax, and cholera.

A brief consideration of some of the important features of the structure of the fly will enable one to understand the ways in which it is able to carry disease germs. The proboscis of the fly is adapted to a sucking function and on this account it cannot take in solid food. Sugar, dried specks of milk or sputum must first be dissolved by the saliva of the fly, and is then pumped by an apparatus in the pharynx into the fly's crop. Very frequently the fly regurgitates its food from the crop in the form of large drops of fluid. In some cases these regurgitated drops are deposited as "vomit spots" on the surface upon which the fly is resting, such as the glass pane of the window, where they may be recognized as opaque light-colored spots, as distinguished from the brown excreta commonly known as "fly specks." Typhoid bacilli and other disease organisms have been found in specks of both sorts—the faecal spots and the vomit spots which have been made by flies that have been in contact with infectious material.

The body of the fly is most excellently adapted for the transference of micro-organisms because it is thickly clothed with hairs of varying lengths. Its legs resemble miniature brushes from which no cleaning can remove the organisms that may have been picked up during its walks over infective materials. The result is that these germs are spread upon whatever substances the flies visit afterward within a certain length of time.

It is interesting in this connection to note that flies are not only normally infected with micro-organisms of various sorts but that the number and kind of organisms vary and are affected by the places frequented by flies, as shown by the following experiment:

"Three flies, A, B and C, were caught at random; A was caught in the living-room of a house, B was caught out-of-doors, and C was caught in the household dust-bin and refuse can. In each case the fly was allowed to walk over a medium of nutrient agar-agar which was afterwards incubated, and at the end of the fourth day the following colonies of fungi or moulds and bacteria were observed, isolated, and identified.

"Fly A. 25 colonies of bacteria and 6 colonies of fungi

"Fly B. 46 colonies of bacteria and 7 colonies of fungi

"Fly C. 116 colonies of bacteria and 10 colonies of fungi

"The large number of bacilli carried by the fly C demonstrates in a very

convincing manner the infection which a fly frequenting refuse is able to carry. All flies frequent refuse of varying degrees of filthiness and divide their attention between such refuse and other food, as is a matter of common observation; therefore it is unnecessary to discuss further the statement that all flies are germ carriers."

All this leads to the one conclusion that nothing can prevent a fly which has had access to matter containing micro-organisms from carrying those micro-organisms and infecting fresh matter which, in our case, is usually food. Further, one is able to make the assertion that, owing to the possibilities of becoming infected and the fact that the fly is continually coming into contact with micro-organisms in the materials it frequents for the purposes of feeding or breeding, "no fly is free from micro-organisms or germs from the time it draws itself out of the puparium to enter the winged state until its death."

The practical questions then are: (1) Where does the fly breed, and (2) What methods can be adopted for the control of fly breeding. "Broadly speaking, house-flies will breed in almost any decaying matter of a vegetable or animal nature and in excrementous substances, if certain conditions, namely, those of temperature and moisture, are favorable. Temperature, moisture, and the character of the food are the chief factors governing the rate of development.

"Horse manure forms the chief substance in which the larvae are found and heaps of stable manure are the principal breeding places of these insects. In addition to this they have been found feeding upon the following substances: human excrement, both as isolated faeces and in latrines and mixed with ashes; cow dung; fowl dung; cess-pools; straw and textile fabrics such as woolen or cotton garments and sackings which have been soiled with animal excrement; mushrooms; decaying vegetables, fruits and food stuffs such as potato skins, melon, bananas, pears, apricots, cherries, plums, peaches; bread and milk, boiled egg, bad meat, and rotting grain such as wheat. They have also been found in spittoons. From these facts it will be understood that wherever there are collections of manure, or excrement, or of waste animal or vegetable substances collectively known as garbage, house-flies are able to breed on the occurrence of a suitable temperature." Hirms, in California, obtained 10,282 larvae of the house fly from fifteen pounds of samples taken from five different parts of a manure pile after four days' exposure. The whole manure pile weighed about 1000 pounds, and on a conservative estimate it would contain over 455,000 maggots.

Flies normally begin to breed in April or May and continue to October, the greatest activity in this respect being in the hot months of August and September. It has been found, however, that when the temperature is sufficiently high, as sometimes occurs in warm cellars and kitchens, flies are able to deposit their eggs and the larvae will develop during the winter months. A single female fly is capable of depositing from 100 to 150 eggs at one time, and five or six and possibly more batches of eggs can be deposited during its short life. It has been calculated that if the progeny of a single pair of flies, assuming that they all lived, were pressed together at the end of the summer, they would occupy a space of about a quarter of a million cubic feet. These figures indicate the great superiority of preventive measures as compared with "swatting campaigns."

According to Hewitt—"The measures for the control and prevention of the fly danger must have two objects: (1) to prevent the flies from breeding, and (2) to prevent the transference of infection by them."

The first of these objects is fundamental and of prime importance. Until this is realized any steps which may be taken will be of little value. The problem is similar in all respects to the mosquito problem. The abolition of the breeding places of the mosquito and the prevention of their breeding are the first steps in the control of this insect and the prevention of malarial fever. So also with the house-fly.

The study of the breeding habits of the house-fly has indicated the places

and materials in which it breeds. The chief breeding places are collections of horse manure or stable refuse and it has been shown previously in what enormous numbers flies breed in this substance. The first steps, therefore, must be taken in the direction of preventing flies from breeding in horse manure or stable refuse.

It is obvious that the stable manure must not be stored in places accessible to flies. Fly-proof receptacles or chambers should be provided in which the manure is immediately placed. Recognizing the importance of this, many cities in the United States and Canada have passed by-laws requiring that where horses, cows or similar animals are kept, properly constructed pits or chambers shall be maintained for the temporary storage of the manure. Such receptacles should be of solid masonry or concrete and provided with doors that will prevent the ingress of flies. Further, regulations governing the building of stables and cowsheds should provide that the floors of such places should be of solid masonry or concrete. In conjunction with proper storage of the manure, its periodic removal must be provided for. With the greatest care it is not always possible absolutely to prevent flies from depositing their eggs in the manure. It has frequently been observed that the flies will deposit their eggs in the excreta immediately after they are dropped, in fact, they prefer the warm excreta for this purpose. Therefore, to prevent the emergence of flies from eggs so deposited and stored with the refuse, the manure must be removed well within the shortest time that is taken for the life-cycle of the fly to be completed. In summer this time is shorter than in winter. Manure should be regularly moved at intervals not exceeding seven days during the months from April to October and at intervals of not more than nine days during the remainder of the year. The removal should be to a place well without the range of flight of flies from the nearest human habitations. The prohibition of the storage of stable refuse, etc., in places such as railway and other depots pending its removal cannot be insisted upon too strongly, as it has been found that such practices result in an unusual and dangerous abundance of flies in the neighborhood of such storage places.

Manure in stables and in similar places, in addition to its careful storage in suitable receptacles, should be treated, whenever possible, with an insecticidal substance which would kill any larvae, that might be in the manure, and prevent the emergence of flies. Many experiments have been carried out by Howard, Herms, and others with a view to finding an insecticide which will be effective and at the same time reasonably practicable.

"Forbes, experimenting in Illinois, found that a solution of iron sulphate sprayed over the manure effectively controlled the breeding of the house-fly in horse manure. A solution of two pounds of iron sulphate in one gallon of water for each horse per day was used. It was calculated that the average city horse produces about fifteen pounds of manure per day and the heavier draught horses produce twenty to thirty pounds per day. The amount to be treated, however, is less than this, as the horses are out of the stables for a large proportion of the day. Many substances have been put on the market as effective agents in the prevention of fly breeding. Varying results have been obtained from the use of these substances, ranging all the way from entire failure to qualified success. Much remains to be done along this line before definite recommendations will be justified. In the meantime, careful attention to the suggestions for the protection of the breeding places from the fly, and the removal of manure at short intervals, will be successful in abating the fly nuisance."

Specific information as to the result of these experiments may be obtained from the Bureau of Entomology at Washington and from the State Agricultural Experiment Station at New Brunswick.

The old-fashioned and unsanitary privy is not only a favorite breeding place but is the commonest source of infection. Dr. Newsholme states: "Infant mortality is highest in those counties where, under urban conditions of life, filthy privies are permitted, where scavenging is neglected and

where streets and yards are to a large extent not 'made up' or paved." In his recommendations he says: "Sanitary authorities in compactly populated districts should decide to remove all dry closets if a water-carriage system is practicable."

The dangers to which helpless infants are exposed in our populous districts will be apparent to anyone who will give this matter a moment's consideration. Breeding in the excreta by the thousands, and by their emergence and frequent visits to their birth places befouling their bodies and limbs and drenching their intestines with whatever germs the filth may contain, the flies swarm over the faces, the food and the feeding bottles of the helpless infants. Under such circumstances it would be surprising if unsanitary conditions did not bear a close relation to infantile mortality. The abolition of the unsanitary privy is a necessary step in the control of the house-fly and the improvement of sanitary conditions.

The entire matter of the prevention of the breeding of flies and the attitude which the householder and the local health authorities should take towards the question may be summarized as follows: It has been proved by incontrovertible evidence that house-flies are able to act as carriers of the germs of certain prevalent infectious diseases, and that their habits render them especially adapted to the dissemination of disease. The presence of flies, therefore, is a serious menace to the public health. Further, it has been shown that flies breed in stable refuse. Therefore, to maintain such breeding places constitutes a public nuisance of a very grave nature.

In view of the foregoing statements, the methods which must be adopted to prevent the fly from spreading infection are easily understood. Briefly, these methods are: (1) the protection of infected matter from flies, and (2) the protection of food, both liquid and solid, and the protection of the faces of infants and invalids from flies. The necessity of preventing flies from gaining access to excreta, infected or non-infected, is too obvious to require insistence; and the screening of food in the home and in the hospitals, and particularly that intended for infants, is a measure which should be adopted as a matter of course.

Following is a suggested ordinance for the purpose of abolishing the fly nuisance and as a means of fly prevention:

AN ORDINANCE TO PROTECT THE PUBLIC HEALTH AND PUBLIC COMFORT AND PROVIDING CERTAIN PENALTIES

WHEREAS, it is commonly known that flies are very dangerous carriers of filth, filth poisons, and disease germs, that they are born in filth and are a constant menace against the health, happiness and comfort of the people, THEREFORE,

Sec. 1. Be it ordained by the mayor and council of the City of, that it shall be unlawful for any person, firm, or corporation, to create or to place upon their premises, whether owned or leased by them, or to place on any street, alley, or common, any one or more of the following, to-wit: (1) animal manure in any quantity which is not securely protected from flies; (2) privies, vaults, cess-pools, pits or like places which are not securely protected from flies; (3) garbage in any quantity which is not securely protected from flies; (4) trash, litter, rags, or anything whatsoever in which flies may breed or multiply; PROVIDED,

That between the first day of April and the first day of November each year, where manure or garbage is not securely protected from flies, such manure or garbage is required to be removed at least once every seven days and destroyed by burning or burying or scattering over a field for fertilizer.

Sec. 2. It shall be the duty of the chief of police or city marshal or health officer, upon learning in any way whatsoever, of the existence of one or more of the unlawful conditions described in section 1 of this ordinance, to notify the offender in writing, upon blanks provided by the city clerk, to remove or abate said unlawful conditions, stating the shortest reasonable time for such removal or abatement. In the event of the refusal

or neglect on the part of the notified offender to obey such order, the chief of police, marshal, or health officer shall file complaint with the proper city authorities for the enforcement of the law and the collection of the penalties prescribed by section 3.

Sec. 3. Any person, firm, or corporation found guilty of having created or placed on premises either owned or leased by them, or upon any public or private property, any one or more of the unlawful conditions named in section 1 of this ordinance shall be punished by a fine of not less than five nor more than fifty dollars.

Sec. 4. All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed. This ordinance shall be in effect upon publication in the official city paper.

Acknowledgment is made of the use, in the foregoing section, of material published in the following:

Journal American Medical Association
 U. S. Government Public Health Reports
 Pennsylvania Health Bulletin
 Kansas Health Bulletin
 North Carolina Health Bulletin
 The House-Fly: Disease Carrier. L. O. Howard
 The Reduction of Domestic Flies. E. H. Ross
 House-Flies. C. G. Hewitt

APPENDIX I

ALCOHOLIC DRINKS AND NARCOTICS

I. ALCOHOLIC DRINKS

The personal and social importance of the questions involved in "drinking" and in the use of drugs is so fundamental; and the evils, both personal and social, resulting from their use are so destructive that this subject has become and must continue to be one of vital concern to every community and therefore to every school.

Laws have been enacted in nearly every state of the Union prescribing definite instruction in "temperance." The law in this State is clear on this point.

It is imperative therefore that school teachers and all others in authority in school affairs should ask and strive to answer two questions:

1. What should be taught in order to establish habits of abstinence from the use of injurious foods and drinks?
2. How may instruction be given that it may be most effective to this end?

As has been before emphasized, it is a vastly more difficult task to affect conduct, to establish right habits of thought and of intelligent action, than to give information. Therefore in proportion as training in conduct becomes a primary purpose of the school, in that proportion a high type of teacher will be needed and also a teacher who has been adequately trained for his work. No person who teaches in a superficial and routine way can become an effective trainer of youth.

Doubtless the most exhaustive study of the "Liquor problem" ever made was by a committee of fifty whose two-volume report was published in 1903. In the chapter on physiological instruction, the committee has this to say regarding the importance of the teacher.

Teachers possess a vantage ground in opportunities for observation and experience in educational matters held by no other class of the community. Certainly one of the weakest features of the present plan of instruction in so-called scientific temperance has consisted in almost total failure to adequately recognize this fact. And it is safe to say that ultimately the form which this instruction shall take must of necessity be determined *by the tact and wisdom of our teachers*. It is also safe to predict that in so difficult and delicate a subject there must be the greatest possible freedom of method. Each teacher must be allowed to work in his own way and adapt his teaching to needs of different classes of pupils and even to different individuals, if the greatest good and the least harm is to result.

This investigation disclosed that: "However defective the instruction may be, the general sentiment in schools is sound." The conviction that alcohol and tobacco are bad things to use seems universal. But the strength of this sentiment does not depend upon the amount of information acquired.

There appears to be general agreement upon several points:

1. The conduct of a person (child or adult) depends upon knowledge and character.

A person may be generally intelligent, strong-minded, self-controlled, and well-intentioned, but may err because of ignorance.

A person may be well-informed and err because of weakness of character.

2. Conviction and habit are most easily formed and most positively fixed in the early years. Instruction and training in the first four or five years of school is therefore of primary importance.

3. The general life of the school, the studies, the play, the discipline, should all be planned and administered with a view to training pupils in regular habits of thought and conduct, in self-control, in strength of purpose, in meeting and solving intelligently life's problems. Thus they will be best prepared to meet the influences of various sorts that they have learned to recognize as injurious, among them the temptations to use alcoholic drinks and drugs.

The textbooks published during recent years generally treat this subject satisfactorily. Books written some years back are not reliable or satisfactory in their treatment.

The following quotations are significant:

In alcoholism we have to deal with the chief cause of national inefficiency. This inefficiency is partly caused by the sickness and mortality due to alcoholism, and the numerous diseases which it favors, or actually produces, including insanity. It is caused also by the numerous accidents, suicides and offences against person and property for which alcoholism is responsible. It is caused possibly to an even greater extent than by the direct methods already indicated, by other less direct means. Alcoholism is a chief cause, if not actually the chief cause of poverty.—*Arthur Newsholme*, M. D., Examiner in Public Health to the University of Cambridge, England.

The facts and figures of life assurance are stubborn and hard to gainsay, and, telling a tale of their own, are worthy of due consideration. In reviewing the question of the action of alcohol upon the value of "lives," three questions have to be asked and answered. They are:

1. Does the excessive use of alcohol tend to shorten life? The answer to this, from the universal experience of offices, is that the excessive use of alcohol undoubtedly shortens life.

2. Does alcohol taken in moderation affect the probability of a lengthy life? The answer to this query is that an increasing number of statistics over an increasing number of years show that even a moderate amount of alcohol habitually taken tends to shorten life.

3. Do total abstainers from alcohol show a distinctly greater longevity than any other class of the community? The answer to this question must now be in the affirmative.

The following statements are made by Professor Irving Fisher, of Yale University, President of the Committee of One Hundred on National Health.

As a statistician and economist, I have made studies during the last ten years which have led me to the conclusion that while many false and exaggerated statements have been made on the evils of alcohol, its general condemnation by scientists of late has not been too strong.

If a man wished to become an athlete and to go into training the first thing his trainer would tell him would be to cut out alcohol absolutely. In fact, no trainer would undertake to train a man unless he was willing to follow this rule.

Employers are beginning to understand that, on the subject of alcohol at least, the interests of the employer and employee are identical. In fact, one of the great causes for the reduction of alcohol in recent years has been the fact that the employer has found it to his financial interest to require total abstinence of his workmen. Dr. Greenfell, the missionary among the Labrador fishermen, says: "Why don't I want to see liquor used at sea? Because, when I go down for a watch below, I want to feel that the man at the wheel sees only one light when there is only one light to see."

Dr. Abbot states: "While alcohol affects the body, the greatest harm done by it is to the mind and brain. The constant use of alcohol is bad for the stomach and liver. But these effects, while distinctly harmful, are relatively unimportant as compared with the influence of alcohol on the mind and brain."

Crime is usually, if not always, a manifestation of mental aberration, temporary or chronic, and this mental aberration is in a great number of cases due to alcohol. The Massachusetts Bureau of Labor investigations showed that "84.41 per cent of all the 26,672 crimes (for which there were convictions in Massachusetts in 1895) were due to intemperate habits, and 82 per cent were committed while the criminal was under the influence of liquor."

As Metchnikoff points out, alcohol predisposes to disease; "It lowers the resistance of the white corpuscles, which are the natural defenders of the body. It is well known that people who indulge too freely in alcohol show far less resistance to infectious diseases than abstemious individuals."

The International Congress on Tuberculosis, at Paris, in 1905, passed a resolution: "That, in view of the close connection between alcoholism and tuberculosis, this Congress strongly emphasizes the importance of combining the fight against tuberculosis with the struggle against alcoholism."

Carroll D. Wright, formerly United States Commissioner of Labor, stated: "I have looked into a thousand homes of the working people of Europe; I do not know how many in this country. In every case, so far as my observation goes, drunkenness was at the bottom of the misery and not the industrial system or the industrial surroundings of the men and their families."

Recent researches in physiology and medicine tend strongly to show that even moderate drinking of alcohol is inexpedient. . . . No longer are men who are to be exposed to cold, heat, fatigue, or hardships of any sort, prepared or braced for such encounters by any form of alcohol. No captain of any ocean liner ever supports himself now against the fierce exposures of the bridge by means of alcohol.

Extracts from pamphlet issued by the United States Government, Senate Document 48, entitled *Some Scientific Conclusions Concerning the Alcoholic Problem and its Practical Relation to Life*:

The general conviction thus prevails that alcoholism is distinctly a predisposing factor for the acquirement of tuberculosis, by virtue of its enfeebling, paralyzing effect on the defensive apparatus of the organism and the general systematic resistance to infectious diseases. For centuries it has been realized that everything which disturbs the strength of the organism and interferes with nutrition predisposes to tuberculosis, and it is undoubtedly this result of chronic alcohol poisoning which lessens the resistance to infection. We may fittingly conclude this literary study with the words of Prof. S. Adolphus Knopf, in his article on "Tuberculosis":

"That alcoholism is one of the greatest direct and indirect causes that prepare the field for the tubercle bacilli is now generally conceded, not only by physicians and sanitarians, but also by all sociologists who have studied the question. It is not only a phthisiogenetic disease par excellence in adult life but, according to statistics carefully kept in some of the Euro-

pean hospitals for scrofulous children, in more than 50 per cent of the cases either the father or the mother, or both, were found to be or to have been alcoholics."

Dr. Eugene L. Fisk, Medical Director Postal Life Insurance Company, in a recent discussion of the influence on longevity of so-called moderate drinking, makes the following summary:

1. Available statistical evidence derived from a number of carefully analyzed groups of insured lives show that non-abstainers accepted as thoroughly insurable high-grade risks, experience a higher rate of mortality, approximately 30 per cent, than that exhibited by less rigidly selected abstainers.

2. Insured non-abstainers carefully selected and originally accepted as so-called moderate drinkers, show as a rule a favorable mortality as measured by ordinary insurance standards, but there is a progressive increase in the mortality *pari-passu* with the degree of indulgence admitted, the death rate finally rising well above the insurance tables upon which premiums are based among those who admit that they drink rather freely but yet within the limits prescribed for acceptance by conservative companies.

3. Laboratory evidence warrants the belief that this excess mortality among non-abstaining insured risks is largely due to the direct and indirect influence of alcohol primarily consumed in so-called moderate quantities.

4. This evidence justifies the rising tide of medical sentiment against the general use as a living habit of even so-called moderate quantities of this powerful narcotic drug.

5. The added years of life due to abstinence are of less importance than the increased efficiency and the *greater capacity for normal healthful enjoyment*; it is not the quantity but the quality of existence that counts.

The following regulations of railroads tell their own story:

The use of intoxicants by employes while on duty is prohibited. Their habitual use, or the frequenting of places where they are sold is sufficient cause for dismissal.—*Pennsylvania Railroad Company*.

General order 12 G (b). The use of intoxicants while on or off duty, or the visiting of saloons or places where liquor is sold, incapacitates men for railroad service, and is absolutely prohibited. Any violation of this rule by employes in engine, train, yard or station service will be sufficient cause for dismissal.—*Delaware, Lackawanna and Western Railroad Company*.

Rule G. The use of intoxicants by employes while on duty is prohibited. Their habitual use, or the frequenting of places where they are sold, is sufficient cause for dismissal.

Rule H. The use of tobacco by employes in or about passenger stations, or by passenger train employes when on duty is prohibited.—*Philadelphia & Reading Railway Co.*

II. NARCOTICS

USE OF TOBACCO

Tobacco is the most commonly used drug, and its evil effects should be impressed upon the minds of both girls and boys. The injurious effects

of opium, morphine, chloral, cocaine, and the excessive use of tea and coffee, should also be made clear, and the lesson should be reenforced from time to time.

It has been established, and is now accepted by the medical profession, that injury in childhood to the human organism, either muscular or nervous, may not reveal itself in childhood, but later in life may be the cause of breakdown or death. Eye-strain in school may not show itself until, in later life, eyesight fails before it should. Strain of muscle or poor food in childhood may cause an early decline of powers.

The following quotation is from *Elements of Hygiene and Sanitation*, by Hough and Sedgwick:

Human experience shows that the unwise use of tobacco may unfavorably affect digestion, cause serious disorders of the heart, and impair the work of the nervous system. Those training for athletic events are usually forbidden the use of tobacco because it "takes the wind," i. e. makes impossible the most efficient training of the heart. Many employers have found that youths who smoke cigarettes are less reliable in their work; and this is only one instance of the effect upon the nervous system already referred to, the same result being observed in a diminished steadiness of the hand, often amounting to actual tremor.

These effects do not, of course, manifest themselves in their extreme form whenever tobacco is used; but it is probable that they are always present in some degree. Whether they are noticeable or not depends largely upon the ability of the constitution to resist them. Tobacco is thus often used without demonstrable bad effects when one is leading a hygienic life; but very often the habit formed under these conditions, and the attendant cares and responsibilities of life, result in neglect of muscular exercise and improperly directed nervous activity. And as this neglect begins to tell on general health it is found that the unfavorable effects of tobacco become more pronounced.

Especially to be condemned is its use by those who have not attained their full growth. During youth nothing should be allowed to interfere with the best development of the heart and nervous system, and the use of tobacco endangers the proper development of both of these most important parts of the human mechanism. It can hardly be doubted that many a young man has failed to make the most out of life because the habit contracted in youth has struck in this way at the foundations upon which he had subsequently to build.

Such boys are like wormy apples. They drop long before the harvest time. Very few of them ever advance far enough to enter college. Very few of those who enter last beyond the first year. I want to add my experience to that of Dr. Jordan. I have been in charge of various California schools for the past eighteen years, and invariably in that experience the tobacco boy, if he ever reached the high school, did so in a weakened condition. Never, in those eighteen years, have I graduated a tobacco boy from the high school with sufficient credit to gain entrance to the state university. Not one of them has ever made any serious effort towards a higher education.

The whole school course is strewn with tobacco wrecks.

Out of the forty-two boys enrolled in the high school during the year just closed, only four are using tobacco habitually. Two of these, although they have been with us for three years, have done less than two years of work, and have done that badly. As far as getting an education is concerned they are hopelessly lost. The other two are deficient in their work and will only help to swell the records against tobacco.

Mr. Keene Fitzpatrick, coach of the Princeton University Track Association, has made the following statement regarding the use of tobacco:

Competition in athletics is so keen today that to be successful it is necessary to take advantage of every aid. The best men need constant care and training to keep them in such condition that they may exert themselves so as to produce the maximum amount of skill, speed, strength and endurance.

We find that all athletes are deficient in some respects and need special instruction and development. One of the greatest problems that confronts the coach is to ascertain the defects and how to remedy them. That is solved by a study of the daily life and of the natural physical condition of the men. From a study of hundreds of athletes during the past twenty-five years, I know that the men who never smoked need less special development, get into condition quicker, and remain in condition longer and easier than those who smoke. Non-smokers are always sought by the coaches for the above reasons and are picked for the teams at once.

The smoker may not only have as many natural defects, but he has weakened his heart and his lungs, his muscles have lost much of their natural efficiency, and his nervous system is unsteady. He presents a greater task for the coach and his chances for success are less from the first. Before he may have an equal chance with his non-smoking rival, he must strengthen his weakened organs and tone up his nervous system.

The fact that his nerves are unsteady and less capable of having good control of his muscles, is a great handicap. The man is irritable and constantly loses control of himself, which is a serious disadvantage in all branches of athletics.

To the smoker there is always present the temptation to smoke. When he is in the finest condition and ready to do his very best in competition the temptation is strongest, and if he yields and breaks training, the hard work of weeks may be for naught.

I attribute the great work of many athletes I have known to the fact that they never smoked. I know men who would have been greater athletes if they had not smoked.

We endeavor to induce all men not to smoke at any time. During the training season all men who are candidates for the various teams are compelled to abstain from smoking. If one of the men breaks training by smoking he is dropped from the team at once.

My sincere message to all boys and young men is: never smoke. It is a bad habit and never did and never will do anybody any good. Smoking injures you morally, physically, and mentally. It does not make you a man. It tends to prevent you from becoming one.

The following is from the Annual Report (1913) of the New Jersey State Home for Boys:

In a report in reference to the establishment of an institution for the reformation of juvenile offenders to Governor Parker and the Legislative Session of New Jersey, in January, 1864, the following appears: "Your committee think that now, as of old, the child should be trained in the way that he should go. New Jersey as a long living parent has a deep interest in every child she rears, and if from penury, or orphanage, or neglect, or the direct evil training of the parents, any of her youth are in danger of becoming criminals, it is her right, it is her duty, to take care of her own and of their future, to remove them from evil influences," thus showing conclusively that home conditions and its environment were at that time very much the same as they are today.

To find a boy admitted to the Home who has not indulged in cigarette

smoking is an exception; even small boys from eight to ten years of age show its debasing effects.

Since the organization of the graded school, about one year ago, several boys, the number of which appears in the report of the principal, which is a part of this, have finished—that is, have passed through eight grades and have received what is commonly called and known as a common school education. Others are nearing the end of the course and all are making better progress than in years past under the old system—the non-graded school. The system under which we are now working in our graded school is ideal.

APPENDIX J

MENTAL HYGIENE

Dr. WILLIAM G. SCHAUFFLER

President State Board of Education

The introduction of Mental Hygiene into this series of Appendices has for its purpose the placing in the hands of every teacher facts and suggestions that will enable her better to understand the pupils' attitude towards life in general, and school life in particular.

Mental Hygiene is an attempt to prevent the causes and consequences of insanity. It had its inception in the desire of those who have themselves suffered from diseased minds, to lessen similar sufferings in others. A National Committee stands back of the formation of state and local committees, and the whole subject is being intelligently and systematically studied, with a view to giving assistance to those who are in need of advice for themselves and others. The theoretical and practical knowledge already gathered is at the disposal of all who are interested, and can be secured by correspondence with Mr. Clifford W. Beers, Secretary, National Committee for Mental Hygiene, 50 Union Square, New York City.

Teachers are peculiarly fitted to do good work along these lines, because of their intimate and prolonged association with the pupils under their care, during the years when impressions for good or evil are most strongly made. The teacher is in actual personal contact with her pupils many hours a day during the school year, and furthermore, her position is one of recognized authority in matters of the mind. She therefore is in a position to counteract mental and moral habits already formed, or forming, and to present to the child's developing intelligence by example and precept a mode of thought and action that will ensure mental and moral sanity all through life.

To accomplish this object the teacher must have definite knowledge and strong convictions along the following lines:

1. The pupil's home life, surroundings and influence;
2. The pupil's physical as well as intellectual status;
3. The pupil's habits regarding companionship with other children during play hours.

Many other lines will present themselves for thought and study, but these three seem to cover the most essential points.

Of course no teacher can for a moment expect to familiarize herself with the conditions of all her pupils. All she can hope to do is to pick out here and there a child whose need is most apparent, and confine her especial attention to that child. And it will be readily seen that should every teacher succeed in influencing only one or two children each year, the sum total of good accomplished will be enormous. Nor will the time and thought and study given to the occasional individual interfere with her usefulness to all her pupils. Every effort made to understand and help the pupil in her

class most needing such help will fit her the better to understand and help all.

It is evident from the foregoing that mental hygiene is not a "subject to be taught," but an object to be accomplished. Every teacher must learn to study her pupils, with the object in view of correcting their individual tendencies to faulty habits of mind, which habits may result in nervousness, irritability, hysteria, and incipient insanity. Investigation shows that a large per cent of insanity is preventable.

It should therefore be the teacher's first endeavor to learn how to forestall the very earliest beginnings of insanity.

Dr. Llewellyn Barker, of Baltimore, has written a classic paper on nervous children, which contains many valuable hints for the teacher as well as the physician. Some of the important points are here elaborated, that teachers may use them as a guide for the study and treatment of the individual child.

1. **Home life** needs careful investigation—the individual child's daily habits of life should be studied in regard to proper or improper food (malnutrition).

Sleep—whether sufficient in amount and under proper conditions of fresh air and quiet.

Exercise—both as regards quantity and quality. Some children cannot stand the excitement of hard play or competitive games. Some children have to be taught and encouraged to play.

Study. The question of home study is a most important one, especially in the lower grades, where the children frequently waste much time and nervous force in trying to get their "lessons" amid the constant confusion of family life, with insufficient light and with many necessary distractions incident to the family circle.

Amusements. Injudicious indulgence in "parties" and theatres and especially "moving pictures" must be recognized and counteracted.

In all these particulars the interest and cooperation of parents must be enlisted. It will often be necessary to educate the individual mothers and fathers before much can be accomplished with the children; this will require patience and tact.

2 **School life.** Here the teacher's personality plays the important role. One who is herself physically below par and nervously unstable, cannot hope to counteract these tendencies in her pupils. Therefore she must first "set her own house in order." Then she must recognize the need of adapting the school routine to the individual child. This requires infinite wisdom and tact. Some children need to be encouraged and even pushed; others must be restrained. Competition can be a useful stimulus or a dangerous goad, and must be most carefully employed as a means to an end. The child's personal characteristics must be studied and appreciated.

Decision must be cultivated. *Indecision* is dangerous and encourages nervousness and fears. Insist on the habit of *deciding a question*. If the decision is wrong, change it later; but by all means discourage *hesitancy*.

Recognize the fact that *fear* is a large factor in child life. This may be the result of faulty bringing up, or of an over-sensitive nature, or of physical defects, such as poor eyesight or hearing. Find and eliminate the

cause of fear and you will remove one of the greatest reasons for unbalanced minds.

SEX HYGIENE

Closely related to Mental Hygiene is Sex Hygiene.

The question as to whether this subject shall or shall not be taught in the public schools is still an open one and need not be discussed here. One thing is certain, namely, that every teacher should be acquainted with the fundamental facts regarding sex hygiene, so that should the occasion arise, she may be able wisely and tactfully to lead her pupils into the right lines of thought.

The *New York Medical Record* in an editorial (November 29, 1913) says among other things:

Sex hygiene should be taught—but to the parents. It is too intricate a question for the young, when so many parents are ignorant regarding this subject. Parents should be taught sex hygiene and they should be taught to impart that knowledge gradually and at the proper time, according to the maturity of their own children. The child should get just as much of this knowledge as it is able to appreciate from its physical, sexual and environmental development. There will then be no danger of experiment and abuse from discussion of this subject between the children.

The above applies with equal force to teachers and to parents.

In the *Hand Book* of the National Committee for Mental Hygiene, prepared under the direction of Dr. Stewart Paton, of Princeton University, the following statements are made:

Estimated number of mentally defective persons in the United States, 200,000, or 1 in every 500.

Life is a process of adjustment of the individual to the environment. Health is a state of mind and body in which the adjustments are relatively good, while in disease, of which insanity is a special form, they are insufficient or improper.

There is no broad gap between sanity and insanity.

Of special concern to schools are the following considerations set forth by the National Committee. It is urged that in general education:

1. Recognition be given to the general principle that development of good mental habits and not merely imparting information is the chief aim of education.
2. An educational system be evolved that takes cognizance of the fact that all our activities are deeply rooted in and inseparably connected with the practical issues of life.
3. More objective methods of teaching should be devised, with especial development of the capacity for observation (drawing, nature study, etc.)
4. Emphasis should be placed upon the importance of manual arts as a means of developing and maintaining a healthful interest in life.
5. There should be the cultivation of a frank emotional attitude in general.

The schools are not to blame in any large degree for the mental disorders of the 200,000 insane people of the country. It is, however, unquestionably true that much of the present potential insanity or mental unbalance may be prevented from becoming real, if those in charge of

children understand some of the symptoms of mental unbalance and some of the causes.

The following tabulation is taken from the *Hand Book* previously referred to:

IMPERFECT ADJUSTMENT IN CHILDREN

(Not dependent on defects of intelligence)

Causes

1. Defective heredity
2. Injurious environment factors—injury, diseases of infancy

Cases grouped according to predominating symptoms

1. Indolent type—lack initiative, emotionally indifferent
2. Depressed type—gloomy, pessimistic
3. Excited type—busybodies, aggressive, meddlesome
4. Periodic type—combination of 2 and 3
5. Emotional type—
 - a. abnormally expectant type, never live in present, always dread tomorrow, dreamers
 - b. passionate
6. Slaves of one idea—"monomaniacs"
7. Unstable type—"creatures of the moment," "footballs of external agents"
8. Queer characters—believe in spiritism, anarchism, etc.
9. Fantastic liars and romancers
10. Impelled type—driven by imperative ideas
11. Ethically or socially defective
12. Sex offenders

Treatment

Expert medical advice—removing from public school and placing in special classes where an accurate diagnosis should first be made and then the form of treatment carefully outlined

The following practical suggestions to teachers and parents for the sound mental training of children were gathered by Dr. William H. Burnham, of Clark University, from the discussions of the Mental Hygiene Conference held in 1912:

1. Train your child to thorough cleanliness of mind and body.
2. Bad companions, as well as common towels, common drinking cups, and the like, should be avoided, because there is danger of contagion both physical and mental.
3. Give your child a variety of well-cooked, wholesome food in ample quantity at regular intervals.
4. Train your child to healthful habits of sleep in fresh air, giving opportunity for at least nine hours, and for more than that before the age of 12.
5. Avoid conditions that tend to produce overstrain or precocity. The special business of a young child is to grow and to play with other children.
6. Give your child opportunity for a variety of wholesome activities and interests.
7. Train your child to work hard in some regular occupation suited to his ability and talents, but to avoid extreme fatigue by alternation of work and rest.
8. Train your child to give attention to the present situation and not to worry about the past or the future.

9. Train your child to strict obedience in a few important matters and let him alone in regard to other things.
10. Train your child to avoid drugs and stimulants of all kinds.
11. Protect your child from shocks. Do not frighten him yourself or let other people do so.
12. If your child becomes worried and sleepless, or has muscular twitchings, or the like, consult a competent physician at once.
13. The best method of training is example, and what is good for your child is usually good for you.
14. Take advice of a competent person concerning the peculiar, sensitive, or nervous child, in order to correct a possibly bad inheritance by proper education and environment.
15. Try to get a little recreation every day, and a vacation oftener than once a year.
16. Try to keep your weight up to that regarded as "standard" for your height.
17. Cultivate a cheerful, generous, and charitable disposition.
18. There are many forms of insanity; a large percentage is preventable, and a considerable proportion curable.
19. Observe the very few well-established and simple rules of health concerning food, sleep, exercise, and recreation. Avoid alcohol, drugs, immoral living, venereal diseases, great mental or physical stress and excesses of all kinds.
20. Be temperate in all things.

The business of the school is supposed to be learning, but learning means the acquisition of new material, its assimilation, its organization as a part of permanent memory. The essential conditions of this process, however, are concentration of attention, orderly association, freedom from hurry and nervousness, mental poise, and an attitude of leisure.

PUBLICATIONS OF NATIONAL COMMITTEE FOR MENTAL HYGIENE

Sent upon application free, or for the price indicated below

1. Origin, Objects and Plans of the National Committee for Mental Hygiene.
2. Principles of Mental Hygiene Applied to the Management of Children Predisposed to Nervousness. By Dr. Llewellyn F. Barker, Professor of Medicine, Johns Hopkins University. (Issued March 1912)
3. Summaries of the Laws Relating to the Commitment and Care of the Insane in the United States. Compiled by John Koren. \$1 postpaid. (Issued September 1912)
4. Some Phases of the Mental Hygiene Movement and the Scope of the Work of the National Committee for Mental Hygiene. By Dr. Llewellyn F. Barker, Professor of Medicine, Johns Hopkins University. An address delivered as Chairman of the Sub-section on Mental Hygiene at the 15th International Congress on Hygiene and Demography, Washington, D. C., September 26, 1912. (Issued November 1912)
5. Hand Book of the Mental Hygiene Movement and Exhibit (illustrated). 15 cents at exhibits or 20 cents post-paid. (Issued August 1913)

Requests and orders for pamphlets and reports should be addressed to Clifford W. Beers, Secretary, 50 Union Square, New York City.

The National Committee for Mental Hygiene also distributes reports and pamphlets issued by State Societies or Committees for Mental Hygiene

APPENDIX K

THE TEACHER'S HEALTH

The laws of New Jersey require that a proof of good health shall be a prerequisite for the granting of a certificate to teach in the State.

Much study is now being given to "occupational diseases." Teachers, both men and women, should realize the peculiar health risks in their occupation. Professor Lewis M. Terman, of Stanford University, has brought together the results of these studies of "occupational diseases," as they relate to the teacher, in a book entitled *The Teacher's Health*. It should be read by every one engaged directly or indirectly in teaching.

It has been shown that in the United States more teachers die of lung tuberculosis than do people engaged in other occupations. Other throat and chest troubles, nervous breakdown, anemia, general debility, and intestinal troubles are also conspicuous among the disabilities of teachers.

It is doubtless true that the chief causes for the prevalence of these diseases are in America, as in Sweden and elsewhere: (1) *poor physical endowment*, (2) *overstrain during professional preparation*, (3) *bad hygienic conditions of schools*, (4) *insufficiency of salary*, (5) *indifference of teachers to the requirements of personal hygiene*, (6) *lack of academic and professional equipment*.

Professor Terman makes the following significant statement:

The investigations prove that it is the *beginning* teacher who runs the greatest risk of pathological exhaustion. With 47 per cent of Wichmann's neurasthenics the nervous troubles appeared in less than five years, and within fifteen years for 87 per cent. The reasons probably are (1) the new teacher is more prodigal of energy from excess of enthusiasm and because she has not learned the necessity of mental economy; (2) she lacks the experience which would enable her to work with the least expenditure of effort. Whatever the relative share of these factors, it should be understood that the *first years of employment are critical for the teacher's health*. To ignore the laws of physical or mental hygiene at this period is to sow the seeds of life-long nervous affliction and premature superannuation. School administrators can aid in averting this danger by lightening the burdens of the young teacher, by instructing her in economical methods of work, and still more by patient sympathy, kindly criticism, and frequent encouragement.

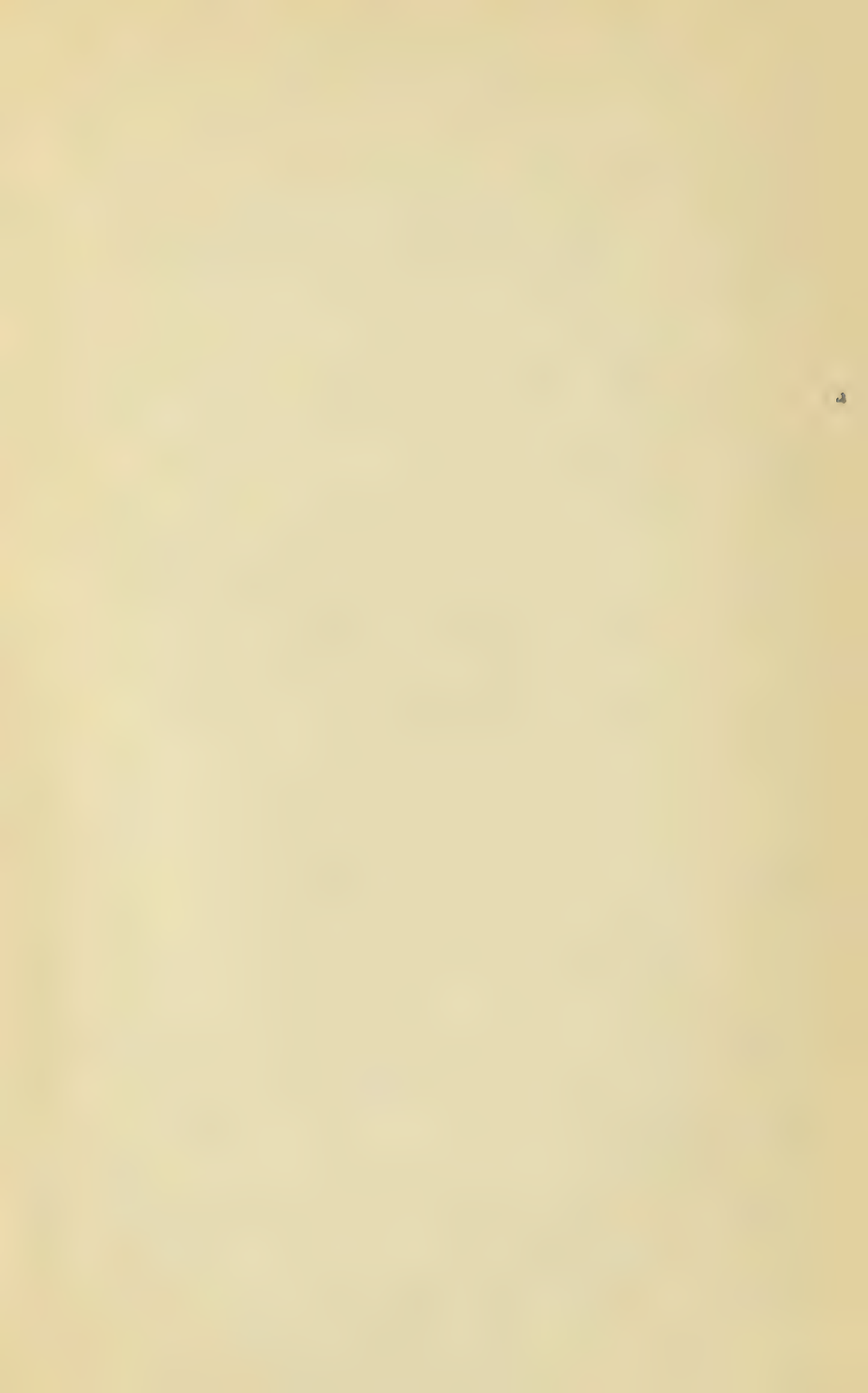
In matters pertaining to health the teacher's opportunity and duty are manifold.

The teacher's obligation

1. She should be in good health when she takes up the work of teaching, realizing that this is one of the most taxing of occupations.

2. She should use reasonable means to keep well in body and mind, not allowing herself to become too much engrossed in her work and giving her first care to the matter of fresh air for herself and for her pupils.

3. She should know enough of the subject of hygiene to regulate her own life intelligently and to teach the essentials of sane living to her pupils.
4. She should give thoughtful, daily attention to the health conditions of the school life that she controls.
5. She should cooperate in every way with the various school and community health agencies.



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